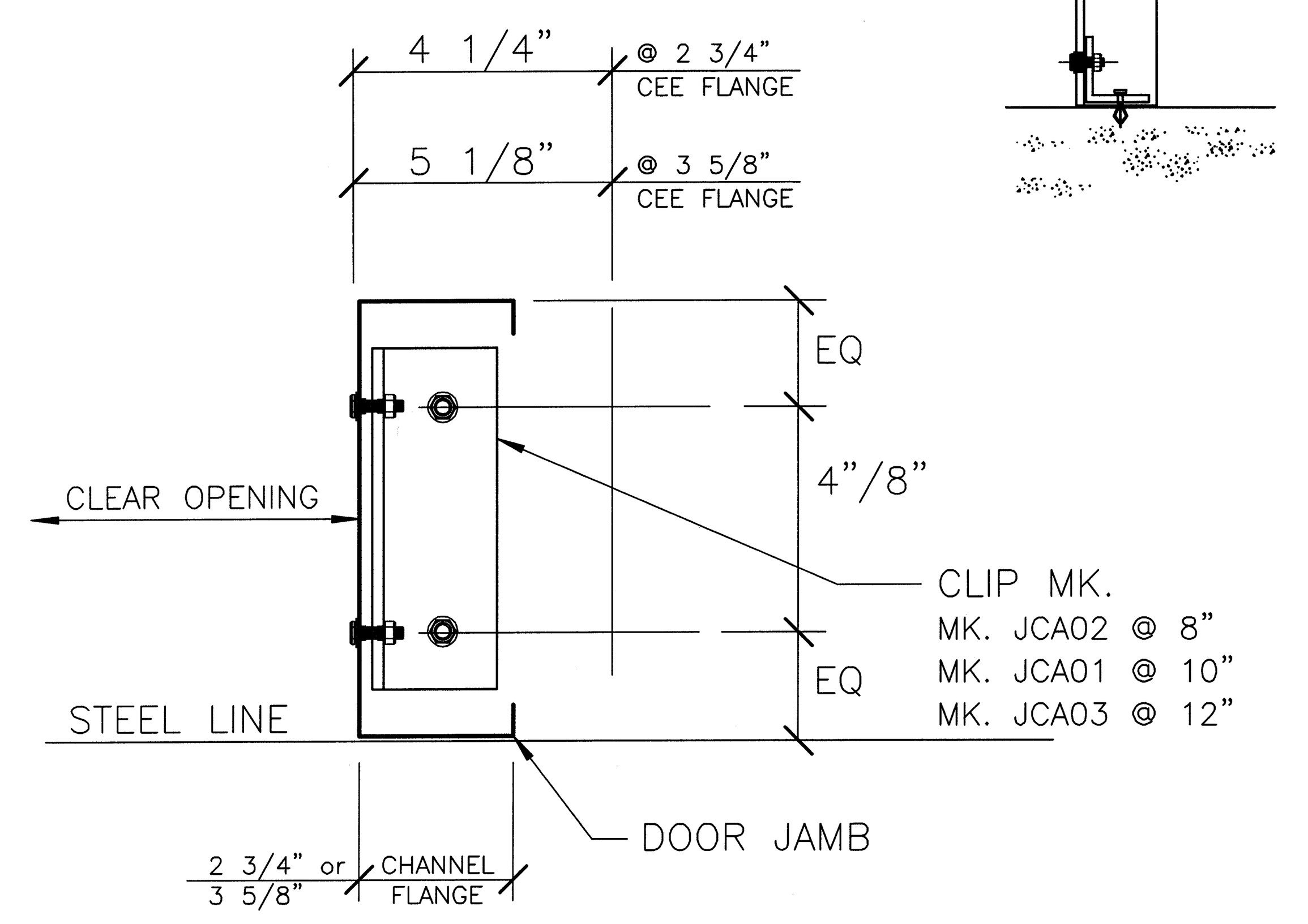
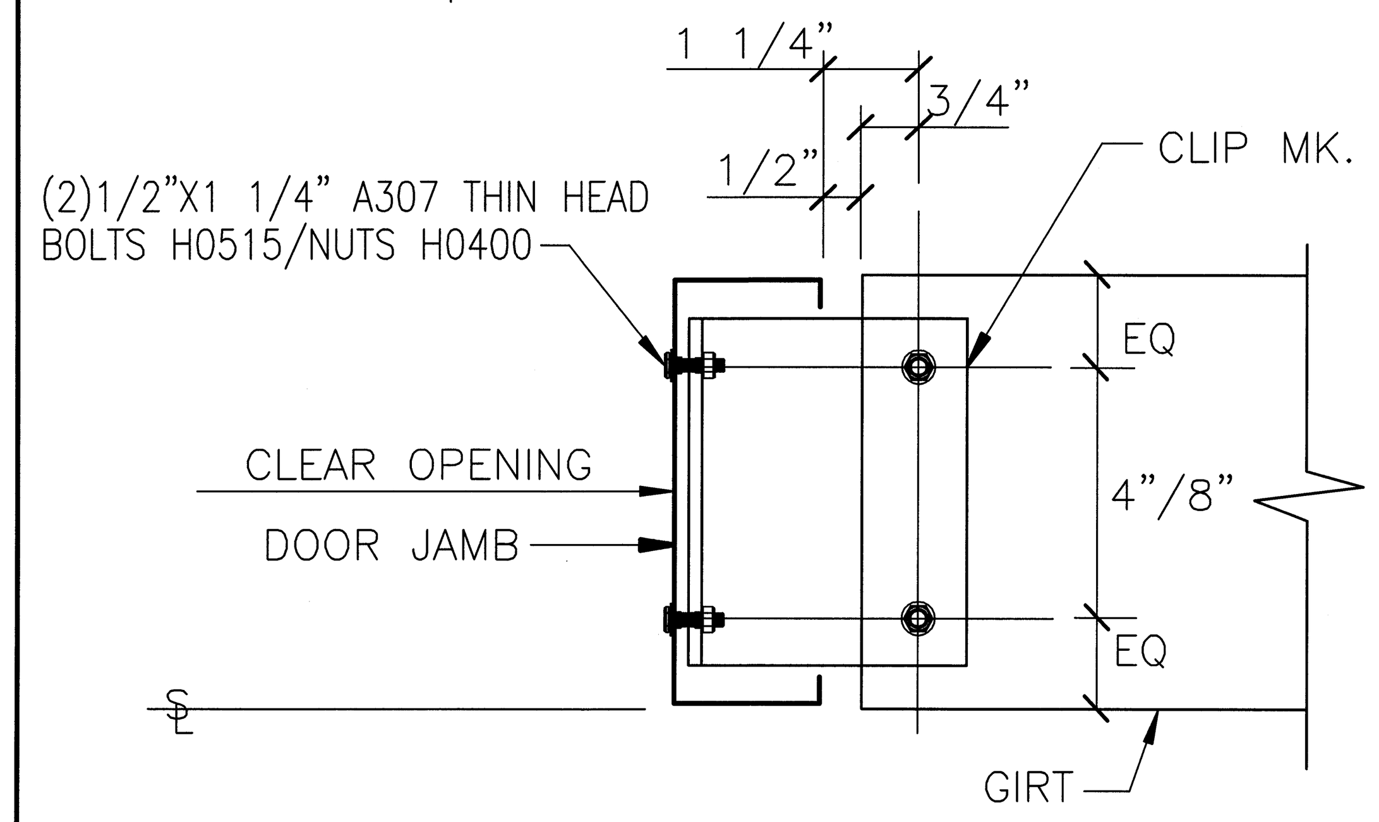
NOTE:
INSTALL CLIPS ON JAMB BEFORE STANDING JAMB. USE LEVEL TO ALIGN GIRTS ADJUST CLIP AS REQUIRED.



JAMB TO FINISH FLOOR CONN (E6)

USE (2) 1/2" X 1 1/4" A307 THIN HEAD BOLTS H0515/NUTS H0400
ATTACHMENT TO SLAB BY OTHERS
SEE ERECTOR NOTE FOR TYP. WASHER REQUIREMENTS

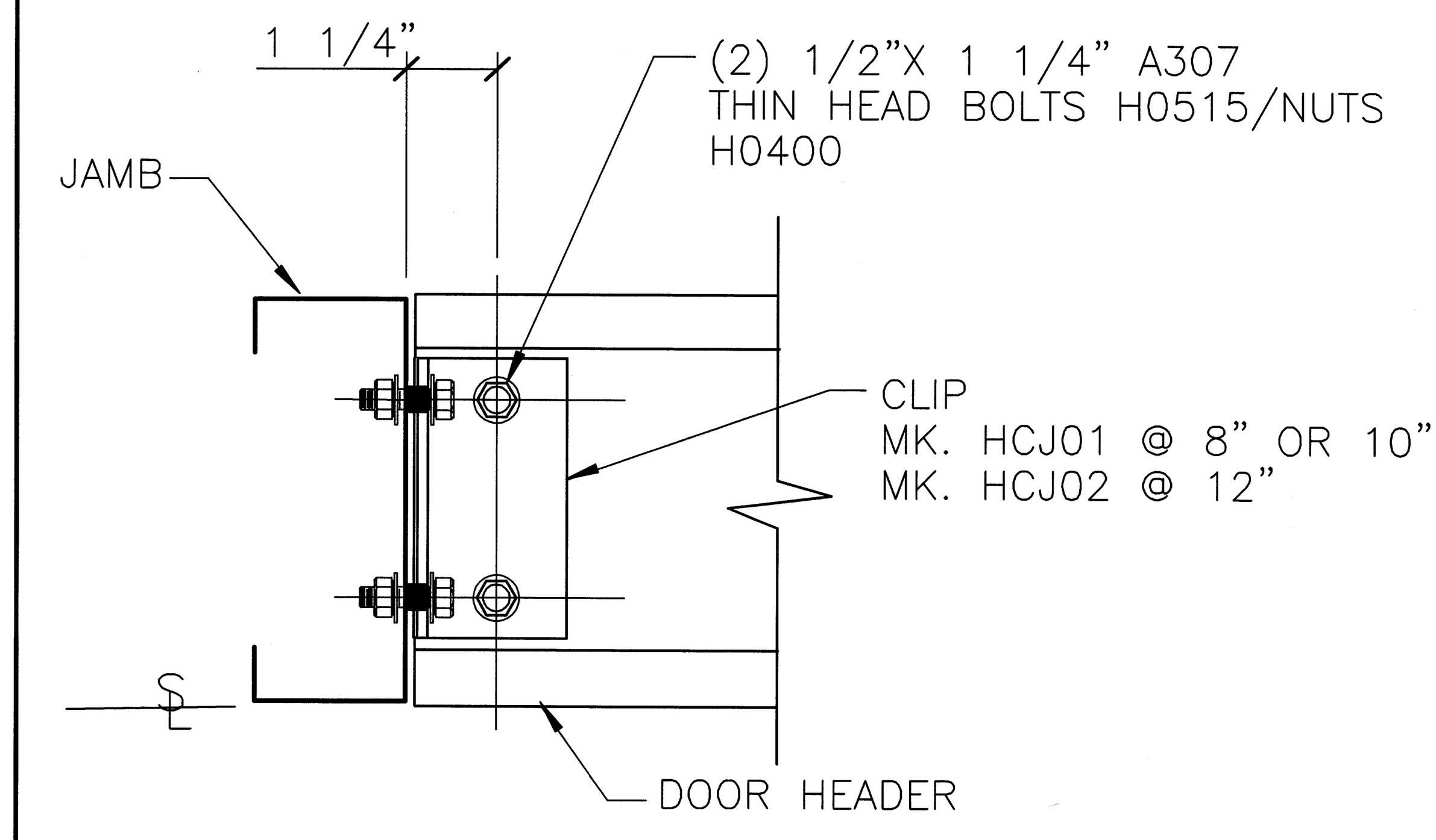
CG0030



GIRT TO JAMB CONNECTION (K1)

USE (2) 1/2" X 1 1/4" A307
BOLTS H0500/NUTS H0400
SEE ERECTOR NOTE FOR TYP. WASHER REQUIREMENTS

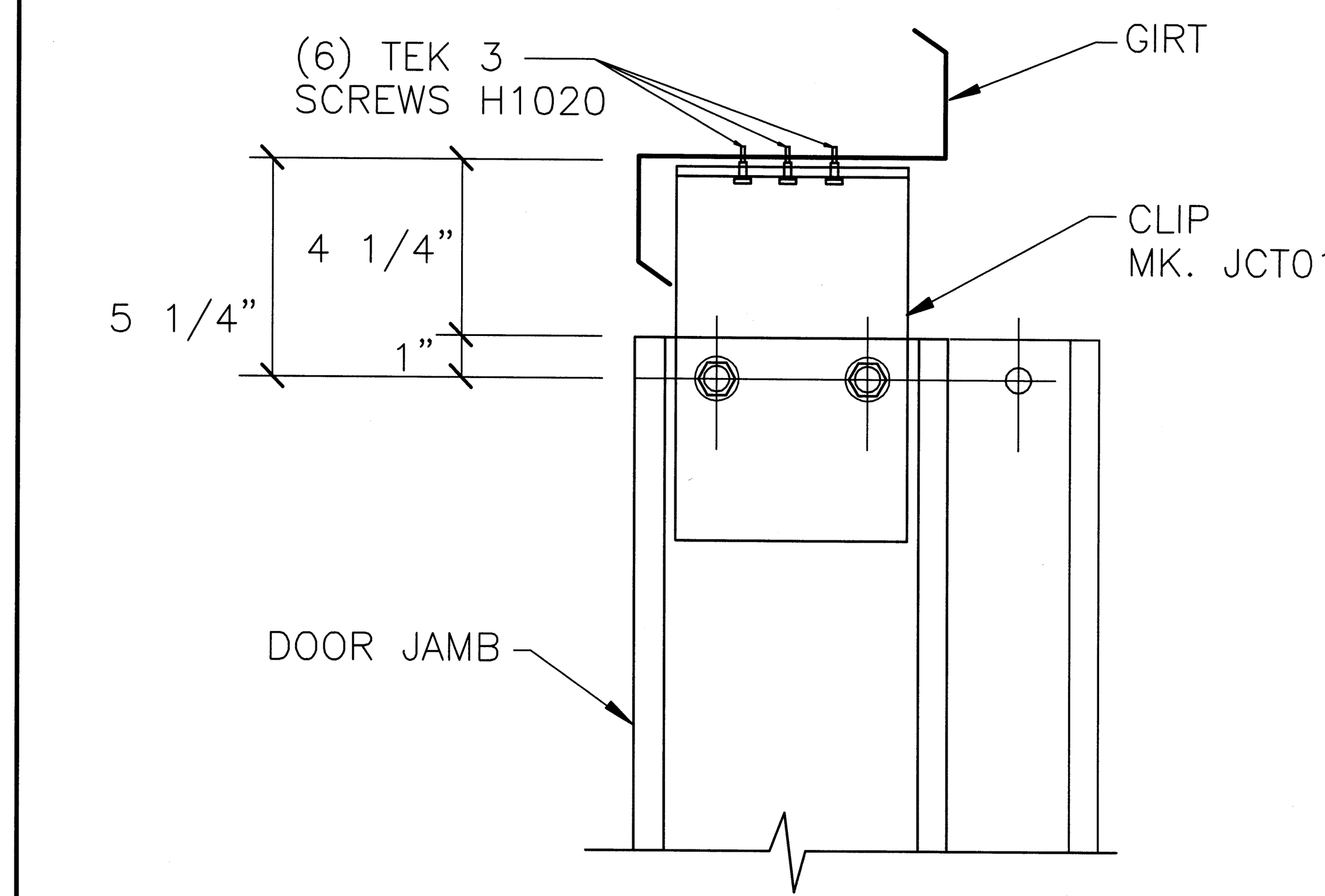
CG0060



HEADER TO JAMB CONNECTION (M1)

USE (2) 1/2" X 1 1/4" A307
BOLTS H0500/NUTS H0400 (U.N.O.)
SEE ERECTOR NOTE FOR TYP. WASHER REQUIREMENTS

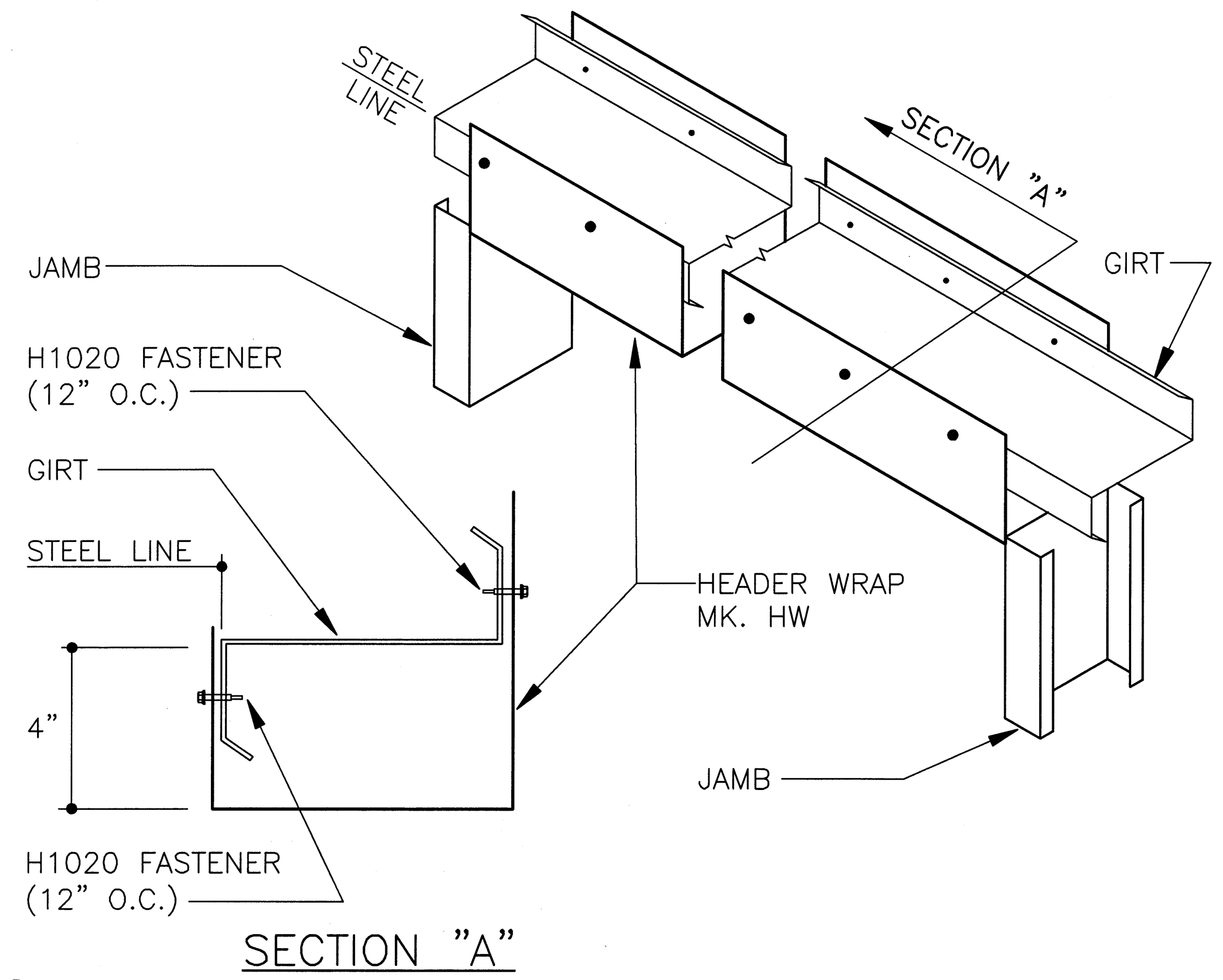
GC0050



DOOR JAMB TO GIRT CONNECTION (L9)

USE (2) 1/2" X 1 1/4" A307
BOLTS H0500/NUTS H0400
SEE ERECTOR NOTE FOR TYP. WASHER REQUIREMENTS

CG0070



HEADER WRAP DETAIL

CG0025

ISSUE	DWN	CHK	ENG	P.E.	DATE
APPROVALS	MBS	CEB	NHS	CDN	09/14/2012
REVISED APPROVALS	MBS	CEB			09/27/2012

NUCOR BUILDING SYSTEMS
305 INDUSTRIAL PARKWAY, WATERLOO, IN 46793
PHONE: (260) 837-7891 FAX: (260) 837-7384
PO BOX 1006, 200 WHETSTONE RD, SWANSEA, SC 29160
PHONE: (803) 568-2100 FAX: (803) 568-2121
600 APACHE TRAIL, TERRELL, TX 75160
PHONE: (972) 524-5407 FAX: (972) 524-5417
1050 WATERY LANE, BRIGHAM CITY, UT 84302
PHONE: (435) 919-3100 FAX: (435) 919-3101

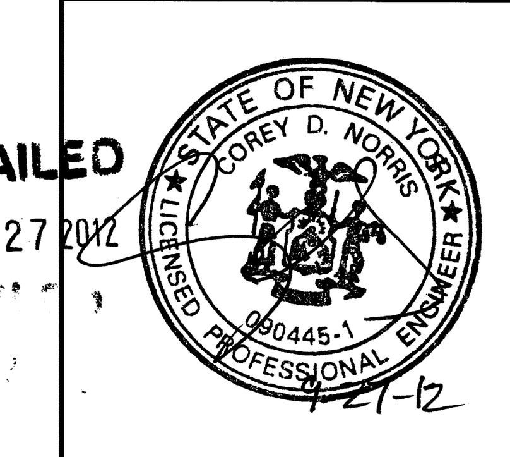
PROJECT NAME:
AQUA NY WATER PHILLIP ROSS IND.
LEVITTOWN, NY 11756

CUSTOMER:
DANALLISON ENTERPRISES, INC
MASTIC BEACH, NY 11951

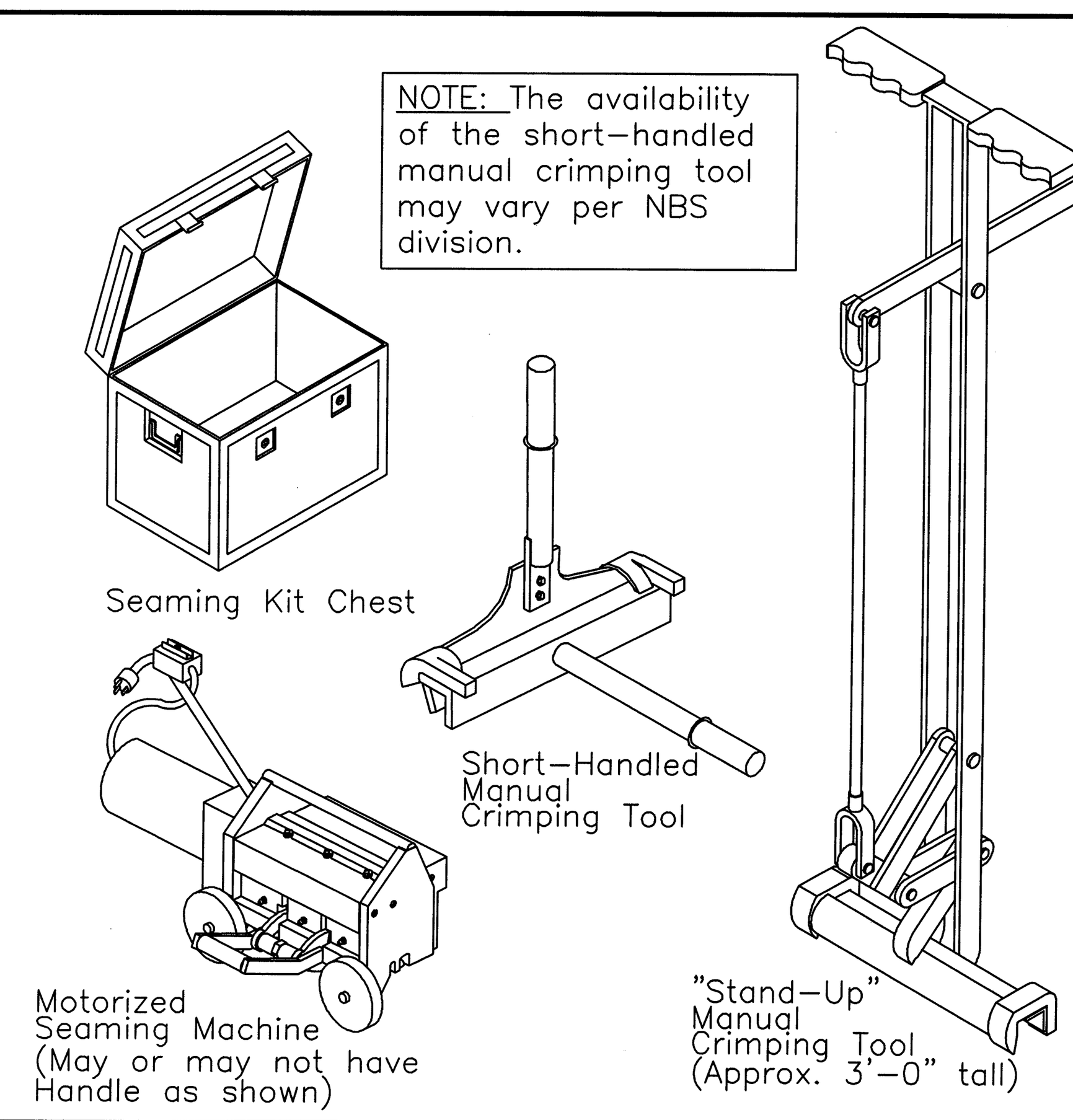
JOB NUMBER:
S12S0554A

SHEET NO:
D4 of 9

MAILED
SEP 27 2012



CFR MANUAL SEAMING INSTRUCTIONS



SPECIALIZED SEAMING TOOLS

The seaming of the roof panels requires special seaming tools that are available only through NBS. CAUTION: The use of any other seaming equipment will result in faulty and/or damaged seams and shall invalidate the roof system's material and weathertightness warranties.

SEAMING TOOL SOURCE

The seaming tools are provided by NBS in accordance with the terms and conditions of the NBS contract documents. Contact the NBS Customer Service Department to arrange scheduling, delivery, and return of the seaming tools.

IMPORTANT NOTE: THE INSTRUCTIONS ON THE PAGE ONLY ADDRESS THE USE OF THE HAND CRIMPING TOOL. THE INSTRUCTIONS FOR MECHANICAL SEAMING, IF REQUIRED, ARE OUTLINED IN THE CFR SEAMING MANUAL, WHICH IS INCLUDED WITH THE MECHANICAL SEAMER KIT.

CFR SEAMING REQUIREMENTS

THE DESIGN OF THIS STRUCTURE REQUIRES THAT THE FOLLOWING SEAMING METHOD BE UTILIZED AS A MINIMUM:

1)☐ "ROLL LOCK" SEAM™ (SEE NOTE 1 AND 2 BELOW)
2)☐ "VISE LOCK" SEAM™ (SEE NOTE 1, 2 AND 3 BELOW)
3)☐ "VISE LOCK 360"™ SEAM (SEE NOTE 2 AND 3 BELOW)

NOTE 1: ADDITIONAL SEAMING MAY BE NECESSARY AS SPECIFIED BY THE BUILDER.

NOTE 2: MULTIPLE SEAMING TYPES MAY BE REQUIRED. REVIEW THE ROOF SHEETING PLAN CAREFULLY FOR SEAMING REQUIREMENTS.

NOTE 3: NOT ALL ROOF SYSTEMS REQUIRE MECHANICAL SEAMING. THE BUYER, OWNER, OR ARCHITECT MAY ELECT TO SPECIFY A MECHANICALLY SEAMED PANEL. OFTEN, FACTORY MUTUAL RATINGS ALSO REQUIRE SECOND PASS A MECHANICAL SEAMER SEE IMPORTANT ERECTOR NOTE BELOW ON "VISE LOCK 360" SEAMER REQUIREMENTS.

WHEN TO SEAM

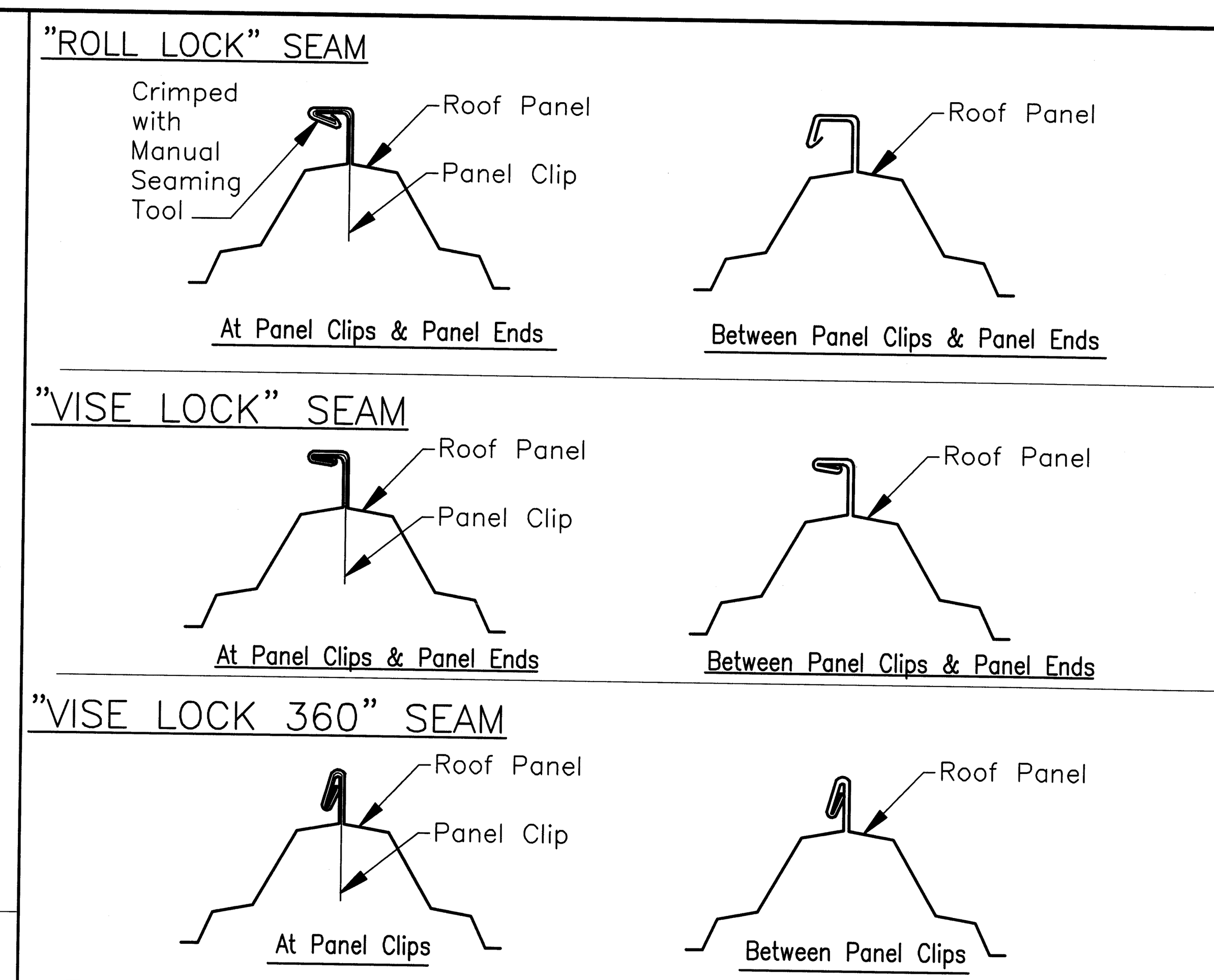
Whenever possible, the installed roof panels should be seamed at the completion of each day's work. If high winds or rain/snow conditions are imminenet, the installed roof panels must be seamed before such conditions occur.

Refer to the project erection drawing Roof Sheeting Plan(s) and or Detail pages to determine what seaming option is required. The above detail conveys the MINIMUM seaming requirements based upon the design of the project. Additional seaming may be necessary as specified by the builder. NOTE: multiple seaming types may be required on a project, review the Roof Sheeting Plan and details carefully.

For roofs requiring "Vise Lock" or "Vise Lock 360" seaming, it may not always be practical to mechanically seam the panels until after the roof installation is complete. In such cases, it may be desirable to temporarily "Roll Lock" seam the panels with the Manual Seaming Tool. The panels can then be mechancially seamed at a later date.

IMPORTANT: It shall be the erector's responsibility to apply the "Roll Lock" seaming method in such a way as to ensure that the panels have been adequately secured until mechanical seaming can occur.

IMPORTANT "Vise Lock 360"™seamer Note:
In order to achieve a good VL360 seam, the erector must have first successfully seamed the roof with the primary seamer ("Vise Lock"™). Before running the VL360 seamer, the erector needs to hand crimp the "Vise Lock"™seam into the "Vise Lock 360"™seam. See the CFR seamer erection manual for your specific hand crimping application.



SEAM TYPES

The NBS CFR roof system has three seam type options. The project design and performance requirements govern which seam type is required. Different seam types may be required on specific areas of the roof. In all cases, refer to the erection drawings to determine the required seam type and locations.

"ROLL LOCK" SEAM

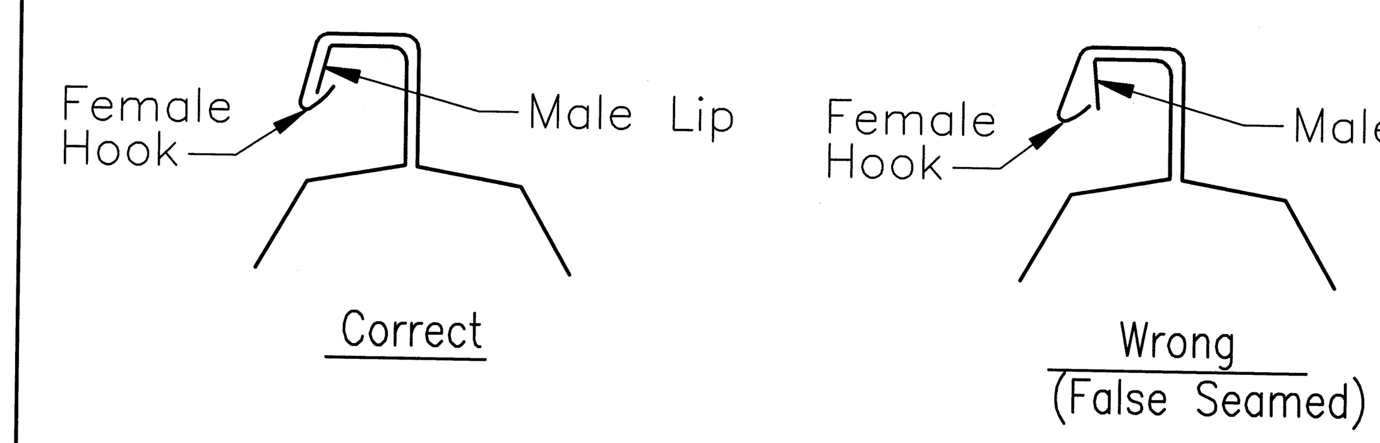
The "Roll Lock" Seam requires the roof panels be seamed with the manual crimping tool only at the panel clips, the eave, the high side of the roof panels, and the end laps. The Motorized Seaming Machine is not required for this seam type.

"VISE LOCK" SEAM

The "Vise Lock" seam requires seaming the roof panel with the Manual Crimping Tool at the starting eave or ridge end of the panel, and at the end laps, then seaming the full length of the roof panels with the Motorized Seaming Machine. Refer to the CFR SEAMING MANUAL for specific instructions. This manual is included in the Mechanical Seamer Kit.

"VISE LOCK 360" SEAM

The "Vise Lock 360" seam requires that the panels be previously "Vise Lock" seamed. Refer to the CFR SEAMING MANUAL for specific instructions. This manual is included in the Motorized Seamer Kit.



CHECK PANEL ASSEMBLY

SIDE LAP FIT-UP

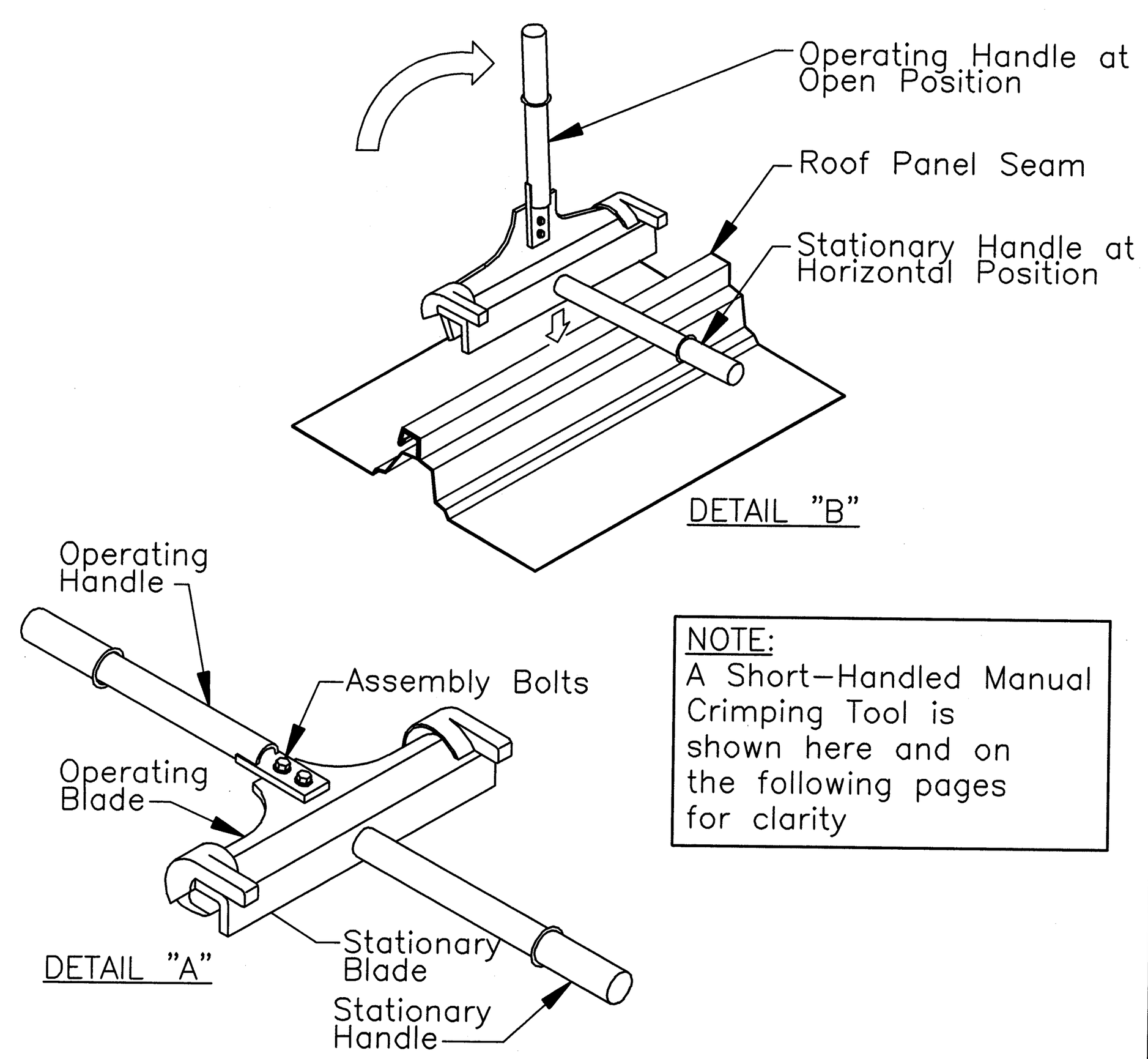
Before seaming, inspect the full length of each roof panel side lap. Check that the lip at the panel's male edge is enclosed by the hook of the adjacent panel's female edge, as shown in the detail above. Any conditions where the male lip is not positioned inside of the female hook must be corrected before attempting to seam the roof panels.
CAUTION: False seaming may occur where the female lip does not hook the roof panel's male edge. False seamed roof panels cannot provide their designed wind load and weather resistance.

CLIP ALIGNMENT

Before seaming, check that each roof panel clip is properly seated in the roof side lap assembly. Any displaced clips must be corrected before attempting to seam the roof panels.
CAUTION: Panel clips that are not properly aligned can cause faulty seaming and objectionable seam appearance.

SEAM DAMAGE

Before seaming, check that the male and female edges do not have kinks or other distortions. Any such distortions must be corrected before attempting to seam the roof panels.



MANUAL CRIMPING TOOL OPERATION

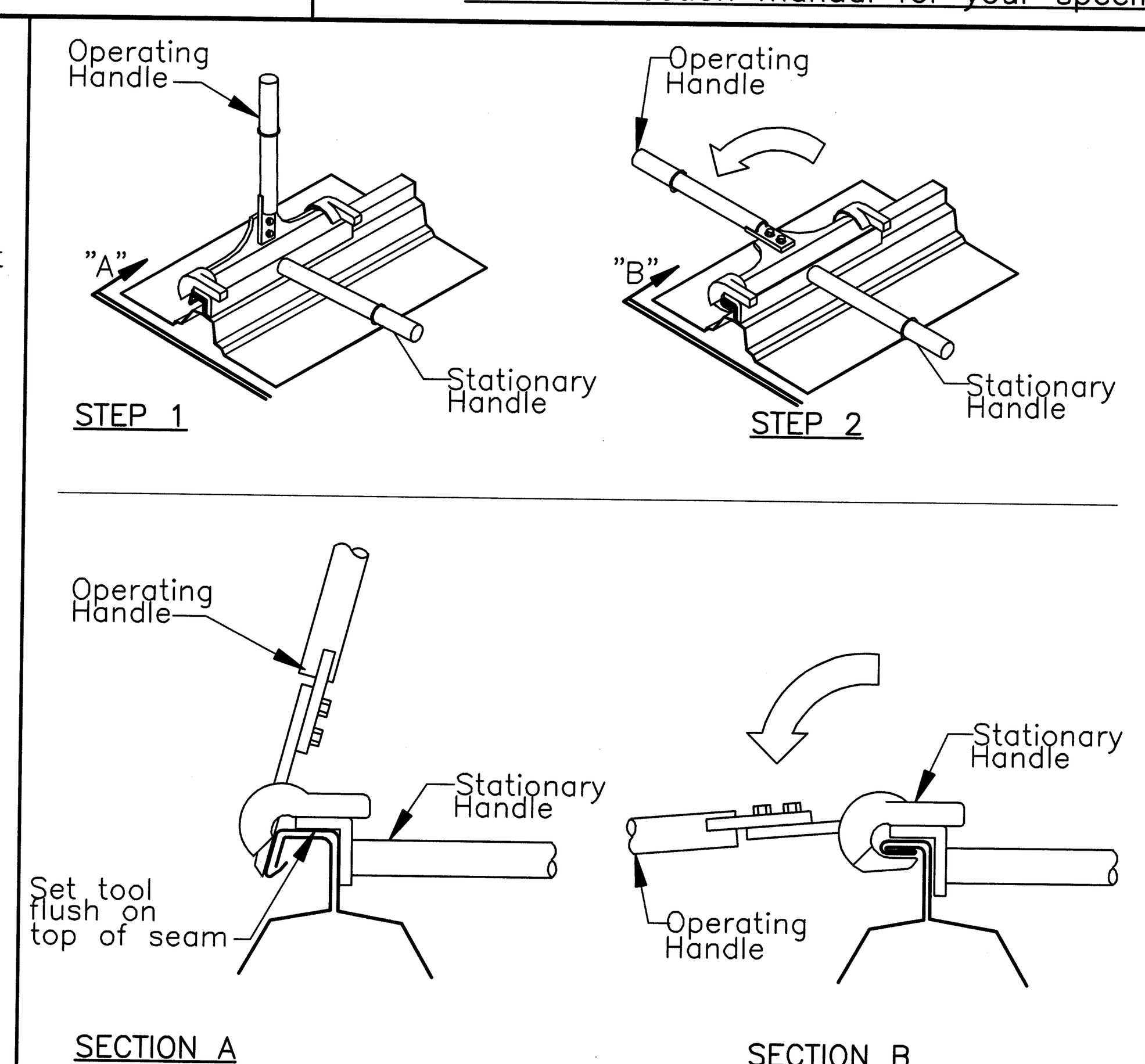
NOMENCLATURE

Detail "A" above identifies the operational parts of the Manual Crimping Tool. This manual crimping tool shown is for the manually producing the Vise Lock Seam. If your job is required to have the Vise Lock 360 seam then, you will need to manually crimp at the eave of your bldg with a 360 crimper to start the second pass seamer. Instructions on how to do this operation are in the CFR SEAMER MANUAL.

TOOL ORIENTATION TO SEAM

Orient the tool to fit correctly onto the roof panel seam as shown in Detail "B" above. NOTE: the detail shows a short handled crimping tool, however the tool you receive may be the long handled type, however the orientation of either tool on the seam is the same.

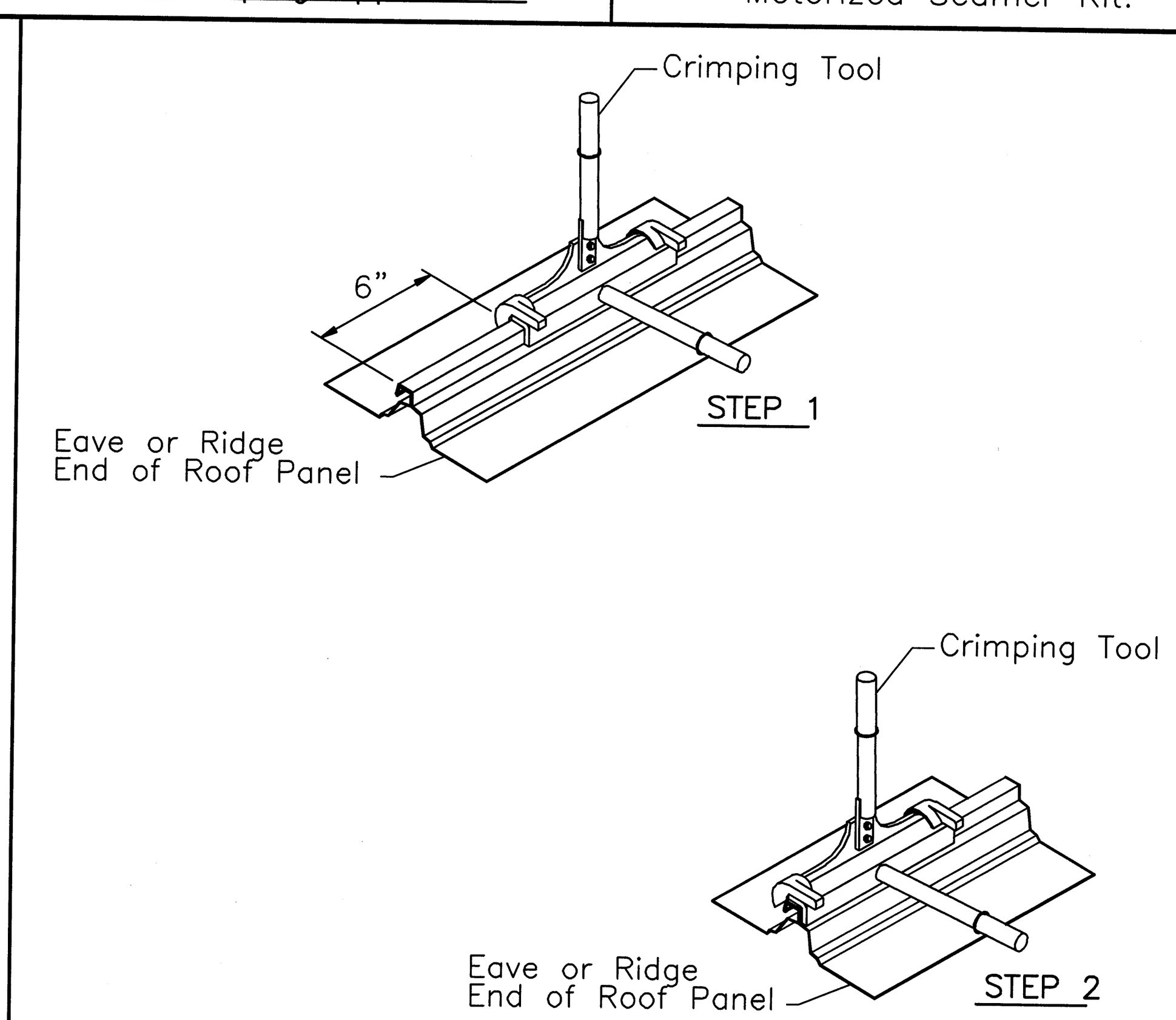
RP1010



MANUAL CRIMPING TOOL OPERATION

FORMING THE SEAM

When the tool is correctly positioned on the panel, push the stationary blade solidly against the top of the seam. While holding the stationary handle in the horizontal position, rotate the operating handle down to the horizontal positiion. This will form the seam.



MANUAL CRIMPING AT EAVE AND RIDGE

TOOL POSITION AT THE END OF THE ROOF PANEL

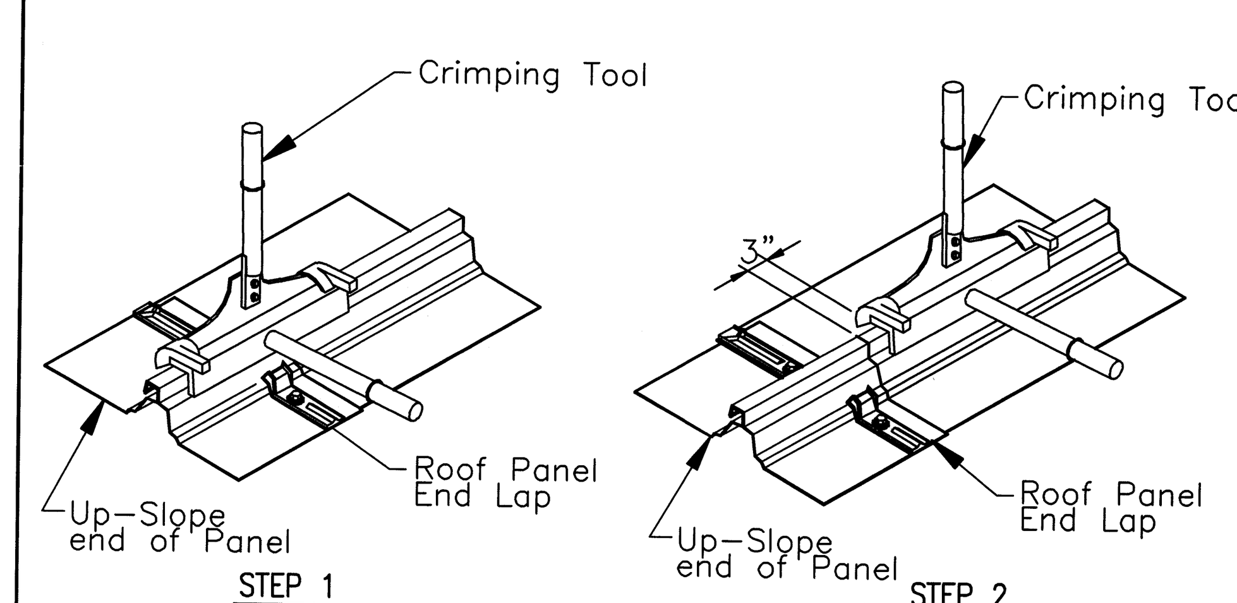
When seaming at the eave or ridge end of the roof panel, the seaming must be done in two steps.

STEP 1

Position the end of the crimping tool 6" from the end of the roof panel and seam that area.

STEP 2

Position the end of the crimping tool flush with the end of the roof panel and seam that area.



MANUAL CRIMPING AT END LAP AREA

TOOL POSITION AT AN END LAP

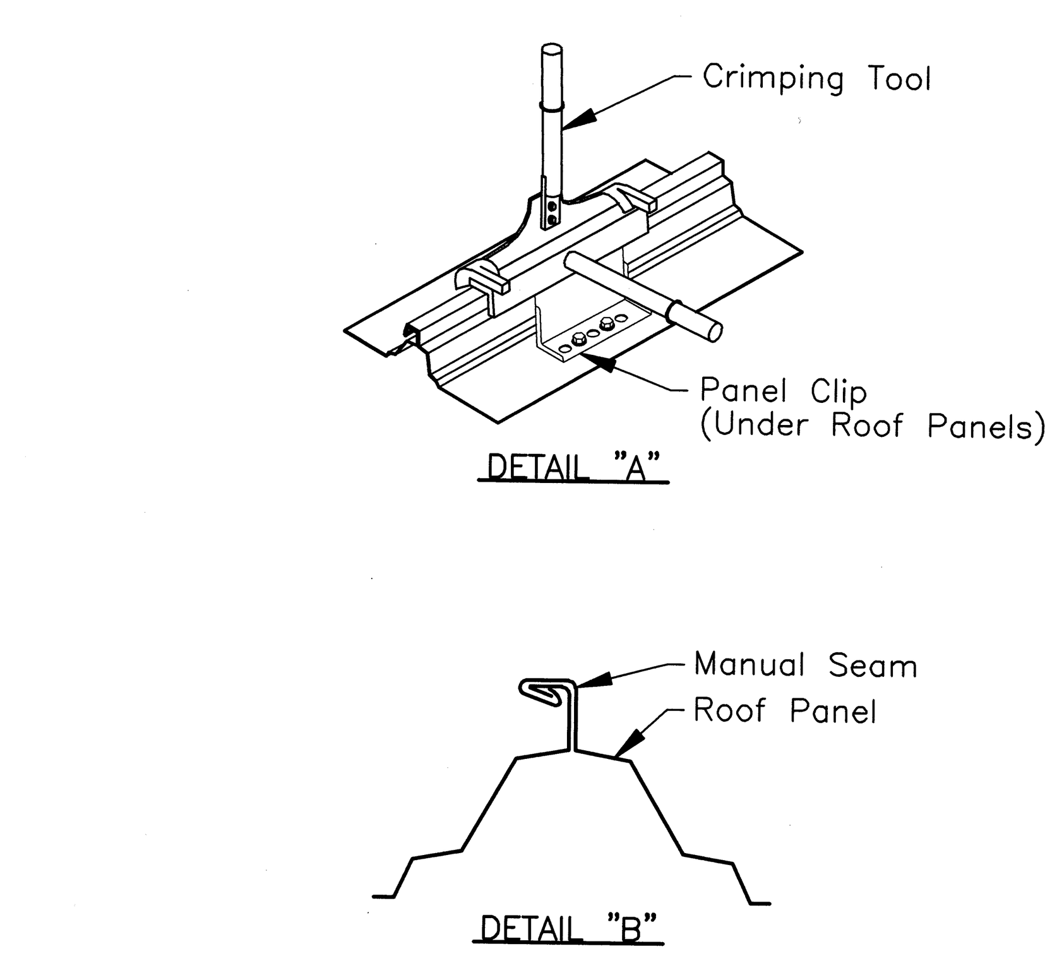
When seaming at an end lap, the seaming must be done in two steps.

STEP 1

Center the end of the crimping tool over the end lap and seam that area.

STEP 2

Position the end of the crimping tool 3" from the edge of the end lap and seam that area to ensure that the panel clip at this location is also crimped.



MANUAL CRIMPING AT CLIPS

TOOL POSITION AT PANEL CLIPS

When seaming at a panel clip location, center the tool over the panel clip and seam that area, as shown in Detail "A" above.

CHECKING THE FINISHED SEAM

Rotate the operating handle to the open position, remove the tool and check that the seam is correctly formed, as shown in Detail "B" below.

DWN	CHK	ENG	P.E.	DATE	ISSUE
MBS	CEB	NHS	CDN	09/14/2012	APPROVALS
MBS	CEB			09/27/2012	REVISED APPROVALS

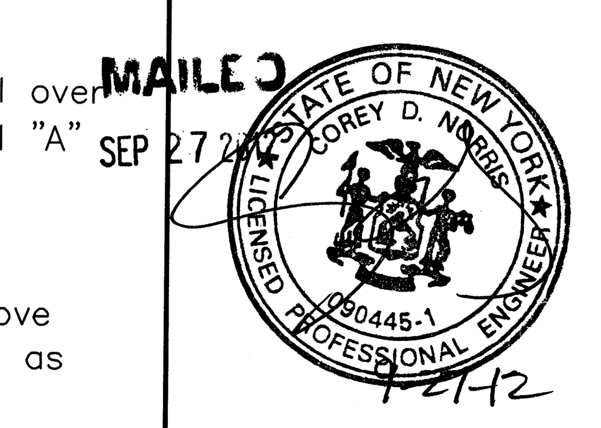
NUCOR BUILDING SYSTEMS
305 INDUSTRIAL PARKWAY, WATERLOO, IN 46793
PHONE: (260) 837-7891 FAX: (260) 837-7384
PO BOX 1006, 200 WHETSTONE RD, SWANSEA, SC 29160
PHONE: (803) 568-2100 FAX: (803) 568-2121
600 APACHE TRAIL, TERRELL, TX 75160
PHONE: (972) 524-5407 FAX: (972) 524-5417
1050 WATERY LANE, BRIGHAM CITY, UT 84302
PHONE: (435) 919-3100 FAX: (435) 919-3101

PROJECT NAME:
AQUA NY WATER PHILLIP ROSS IND.
LEVITTOWN, NY 11756

CUSTOMER:
DANALLISON ENTERPRISES, INC
MASTIC BEACH, NY 11951

JOB NUMBER:
S12S0554A

SHEET NO:
D5 of 9



CFR ROOF SYSTEM ERECTION AND APPLICATION REQUIREMENTS

I. GENERAL ERECTION NOTES

1.1 UNLOADING AND STORING.

1.1.1 CHECK THE QUANTITIES AND CONDITION OF CFR BUNDLES AND TRIM CRATES ON ARRIVAL. NOTE ON THE DELIVERY TICKETS ANY SHORTAGES, DAMAGE OR DISCREPANCIES. MBS BUILDING SYSTEMS SHALL NOT BE LIABLE FOR DAMAGE OR SHORTAGES WHICH ARE NOT NOTED ON THE DELIVERY TICKETS.

1.1.2 EXTREME CARE SHOULD BE EXERCISED WHEN UNLOADING AND HANDLING THE PANEL BUNDLES AND ACCESSORY CRATES TO PREVENT DAMAGE. THE WEIGHT OF THE PANEL BUNDLE IS PRINTED ON THE BUNDLE TAG ON THE END OF EACH BUNDLE. IF THE TAG IS NOT ON THE BUNDLE, YOU MAY CALCULATE THE WEIGHT OF THE BUNDLE WITH THE FORMULA: (QTY. OF PANELS X BUNDLE LENGTH X 2.5lbs. PER FOOT)

1.1.3 BUNDLES UP TO 25 FEET LONG CAN BE LIFTED WITH A FORKLIFT. BUNDLES OVER 25 FEET IN LENGTH SHALL BE LIFTED WITH A CRANE UTILIZING A SPREADER BAR WITH 4 INCH MINIMUM WIDTH NYLON STRAPS. STRAPS SHOULD BE 15 TO 20 FEET APART. TO AVOID DAMAGE TO THE PANELS, STEEL CABLES, CHAINS, OR CHOKERS SHALL NOT BE USED.

1.1.4 THE CFR PANELS AND ACCESSORIES SHALL BE STORED ON HIGH GROUND, SLOPED TO DRAIN, AND TARPED TO PROTECT FROM MOISTURE FORMATION. THE TARP SHOULD BE OPEN AT EACH END TO ALLOW CONSISTENT AIR FLOW THROUGH THE BUNDLES. THE RECOMMENDED PROCEDURES ARE OUTLINED IN THE CFR ERECTION MANUAL. MBS WILL NOT BE HELD RESPONSIBLE FOR DAMAGE OR DISCOLORATION OF PANELS CAUSED BY IMPROPER STORAGE.

1.2 ERECTION SEQUENCE.

1.2.1 THE CFR ROOF SYSTEM IS DESIGNED TO BE ERECTED FROM EITHER END OF THE BUILDING. IN RARE CASES, DUE TO THE BUILDING LAYOUT, IT MAY BE REQUIRED TO START ERECTION FROM A SPECIFIC END. IN THOSE CASES, THIS WILL BE NOTED AS SUCH ON THE ROOF SHEETING PLAN.

1.2.2 FULL-WIDTH PANELS ARE PROVIDED FOR START PANELS TO BE FIELD CUT TO THE PROPER WIDTH. THIS MAY CAUSE THE RIBS TO BE OUT OF ALIGNMENT ACROSS THE RIDGE. THIS IS NORMAL PRACTICE FOR THE CFR ROOF SYSTEM AND DOES NOT AFFECT THE PERFORMANCE OF THE ROOF SYSTEM. PLEASE CHECK THE ROOF SHEETING PLAN AND DETAILS FOR DIMENSIONS OF START PANELS PRIOR TO ERECTING THE ROOF.

1.2.3 FOR BUILDINGS WITH ROOF TRANSLUCENT PANELS: IN ORDER TO ALIGN THE TRANSLUCENT PANELS ACROSS THE RIDGE, IT IS SUGGESTED TO ERECT THE ROOF PANELS ON BOTH SIDES OF THE RIDGE FROM THE SAME END OF THE BUILDING -- UTILIZING THE SAME WIDTH START PANEL. PANEL RUNS WITH TRANSLUCENT PANELS HAVE BEEN PLACED AS SPECIFIED IN THE ORDER DOCUMENTS.

1.3 COORDINATION WITH OTHER TRADES.

1.3.1 SUPPORTS FOR THE CFR ROOF SYSTEM SHALL BE PROVIDED AND ARE REQUIRED AS SHOWN IN THE SECTIONS AND AS NOTED IN THESE SPECIFICATIONS. ALL NECESSARY CLEARANCE DIMENSIONS FOR PROPER ELEVATIONS RELATIVE TO THE ROOF PANELS HAVE BEEN SHOWN. THE ERECTOR SHALL BE RESPONSIBLE FOR COORDINATING THESE DIMENSIONAL REQUIREMENTS WITH OTHER TRADES ASSOCIATED WITH THE BUILDING ROOF SYSTEM.

1.4 ERECTION CARE.

1.4.1 THE ERECTOR MUST BE SKILLED IN THE ERECTION OF METAL BUILDING SYSTEMS AND IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE LOCAL, FEDERAL, AND STATE CONSTRUCTION AND SAFETY REGULATIONS INCLUDING OSHA REGULATIONS AS WELL AS ANY APPLICABLE REQUIREMENTS OF LOCAL, NATIONAL, OR INTERNATIONAL UNION RULES OR PRACTICES. THE ERECTOR REMAINS SOLELY RESPONSIBLE FOR THE SAFETY AND APPROPRIATENESS OF ALL TECHNIQUES AND METHODS UTILIZED BY ITS CREWS IN THE ERECTION OF THE METAL BUILDING SYSTEM AND/OR THE CFR ROOF SYSTEM. THE ERECTOR IS ALSO RESPONSIBLE FOR SUPPLYING ANY SAFETY DEVICES SUCH AS SCAFFOLDS, RUNWAYS, NETS, ETC. WHICH MAY BE REQUIRED TO SAFELY ERECT THE METAL BUILDING SYSTEM AND/OR CFR ROOF SYSTEM.

1.4.2 THE ERECTOR OF THE CFR ROOF SYSTEM SHALL EXERCISE GREAT CARE AND ATTENTION TO THE DETAILS AS SHOWN ON THESE DRAWINGS AND IN THE CFR ERECTION MANUAL TO INSURE A SECURE AND PROPER FIT OF ALL COMPONENTS. MBS SHALL NOT BE RESPONSIBLE FOR SUPERVISING AND/OR COORDINATING THE ERECTION OF THE CFR ROOF SYSTEM WITH OTHER TRADES.

1.4.3 DUE CONSIDERATION MUST BE GIVEN BY THE ERECTOR TO THE EFFECTS OF THERMAL EXPANSION AND CONTRACTION WHEN ERECTING A ROOF TIE-IN TO AN EXISTING STRUCTURE TO INSURE A SAFE, SECURE, WEATHERTIGHT CONDITION. FLASHING FOR TIE-INS TO EXISTING BUILDINGS IS TYPICALLY NOT INCLUDED AS PART OF THE MATERIAL PROVIDED BY MBS BUILDING SYSTEMS. REFER TO THE SECTIONS AND DETAILS FOR SPECIFIC MATERIALS PROVIDED BY MBS

1.5 FIELD CUTTING OF PANELS.

1.5.1 WHEN FIELD CUTTING OR MITERING CFR ROOF PANELS, NON-ABRASIVE CUTTING TOOLS SUCH AS NIBBLERS, OR TIN-SNIPS SHALL BE USED. ABRASIVE CUTTING TOOLS SUCH AS MECHANICAL GRINDERS, SAWS, SHEARS, OR SCISSORS CAN DAMAGE THE GALVALUME FINISH AND CREATE EXCESS METAL SHAVINGS THAT CAN CORRODE THE PANELS. THE USE OF NON-APPROVED CUTTING DEVICES MAY VOID YOUR FACTORY WARRANTY.

II. DESIGN AND PERFORMANCE CRITERIA

2.1 ROOF SYSTEM.

2.1.1 THE CFR ROOF SYSTEM CONSISTS OF 24 GAGE PANELS WITH A NOMINAL COVERAGE OF 2'-0" AND A PANEL SEAM THAT IS BETWEEN 3 1/2" AND 4 1/2" HIGH DEPENDING ON CLIP TYPE USED. REFER TO THE DETAILS AND SECTIONS FOR SPECIFIC PANEL CLIP TYPE.

2.2 PANEL CLIP SPACING.

2.2.1 THE CFR ROOF SYSTEM USES A CLIP TO ATTACH THE PANELS TO THE ROOF SECONDARY MEMBERS. PANEL CLIP SPACING REQUIREMENTS ARE AS FOLLOWS:

FOR CFR ROOF ON A MBS BUILDING: CLIPS ARE REQUIRED AT EVERY PURLIN AND/OR ROOF JOIST.

FOR CFR ROOF ON A NON-MBS BUILDING: MAXIMUM CLIP SPACING IS TO BE 5'-0" FOR PURLIN ROOFS AND 5'-6" FOR JOIST ROOFS.

II. DESIGN AND PERFORMANCE CRITERIA (CONTINUED)

2.3 PANEL CLIP FASTENING REQUIREMENTS.

2.3.1 MBS STANDARD CLIP FASTENERS ARE DESIGNED TO FASTEN TO A STEEL STRUCTURAL MEMBER OF .060" MINIMUM THICKNESS (16 GA.). A MINIMUM OF TWO FASTENERS ARE REQUIRED TO ENGAGE THE STRUCTURAL MEMBER AT EVERY PANEL CLIP LOCATION. IN CERTAIN INSTANCES, THREE FASTENERS MAY BE REQUIRED PER CLIP REQUIRED. LOOK ON CHART AT RIGHT AND IN THE ERECTION DRAWINGS FOR YOUR SPECIFIC FASTENER REQUIREMENTS. FASTENER PULLOUT VALUES ARE DEPENDENT UPON PROJECT LOCATION, SIZE, BUILDING CODE, AND LOADING.

2.4 ROOF TOP UNITS AND CURB SUPPORTS.

2.4.1 THE CFR ROOF SYSTEM IS ELEVATED ABOVE THE TOP OF THE ROOF SECONDARY STRUCTURAL MEMBERS. THE ROOF CURB SUB-FRAMING IS LEVEL WITH THE SECONDARY STRUCTURAL MEMBERS. REFER TO THE DETAILS FOR PROPER JAMB LOCATIONS AND DIMENSIONS.

2.4.2 THE CFR ROOF SYSTEM IS DESIGNED AS A FLOATING SYSTEM. CURB FRAMING AND FLASHING MUST BE DESIGNED ACCORDINGLY TO ALLOW THE CURB SYSTEM TO FLOAT WITH THE CFR ROOF DURING THERMAL EXPANSION AND CONTRACTION. ROOF CURBS SHALL NOT SPAN THE RIDGE OF A BUILDING.

2.5 INSULATION REQUIREMENTS.

2.5.1 MBS RECOMMENDS THAT INSULATION BE USED IN ALL CFR ROOF APPLICATIONS TO AVOID PROBLEMS WITH CONDENSATION FORMING ON THE UNDERSIDE OF THE SHEETING. THIS ALSO PROVIDES A BUFFER BETWEEN THE PURLINS AND THE CFR ROOF TO ELIMINATE NOISE AND POSSIBLE DAMAGE DUE TO METAL-TO-METAL CONTACT. MBS CAN SUPPLY A NOISE REDUCING FOAM TAPE FOR USE IN LIMITED APPLICATIONS (CANOPIES, ETC.) WHEN INCLUDED AS PART OF THE ROOF ORDER. REFER TO THE DETAILS FOR FOAM TAPE REQUIREMENTS.

2.6 PAINTED CFR ROOF.

2.6.1 PAINTED STANDING SEAM ROOF PANELS ARE OFTEN PROVIDED BY MBS. IN THIS CASE, THE CINCH STRAPS, GUTTER BRACKETS, END DAMS, AND OTHER ACCESSORIES WILL BE PROVIDED IN THEIR NORMAL UNPAINTED FINISH. FIELD PAINTING MAY BE REQUIRED; IF SO, PAINT IS NOT PROVIDED BY MBS.

III. COMPOSITE CFR ROOF SYSTEM

(APPLICABLE FOR COMPOSITE CFR ROOF SYSTEMS)

3.1 PRODUCT DEFINITION.

3.1.1 REFER TO THE SECTIONS AND DETAILS IN THESE DRAWINGS FOR SPECIFIC CLIP FASTENING REQUIREMENTS, INSULATION THICKNESS REQUIREMENTS AND LINER DECK TYPE.

3.1.2 COMPOSITE CFR ROOF WITHOUT THE USE OF A LINER DECK IS NOT A MBS STANDARD PRODUCT APPLICATION. DUE CONSIDERATION MUST BE GIVEN TO THE EFFECTS OF CONDENSATION BY THE ENGINEER OF RECORD OR ARCHITECT WHEN THIS OCCURS. IN ADDITION, GREAT CARE MUST BE TAKEN BY THE ERECTOR TO INSURE THAT THE ROOF SYSTEM IS ERECTED IN A SAFE, QUALITY MANNER.

3.2 VAPOR BARRIER.

3.2.1 VAPOR BARRIER MUST BE USED BETWEEN THE LINER DECKING AND THE INSULATION TO PREVENT CONDENSATION. THIS BARRIER IS NOT MY MBS. REFER TO THE ERECTION DRAWING DETAILS.

3.3 INSULATION.

3.3.1 RIGID BOARD INSULATION CAN BE USED IN CONJUNCTION WITH A COMPOSITE CFR ROOF SYSTEM. THE RIGID BOARD INSULATION MUST BE CUT TO ALLOW FREE MOVEMENT OF THE BACK-UP PLATE AT PANEL SPLICES, SINGLE SLOPE HIGH EAVES AND RIDGE LOCATIONS.

3.3.2 UNFACED FIBERGLASS (BATT) INSULATION CAN BE USED IN CONJUNCTION WITH A COMPOSITE CFR ROOF SYSTEM.

IV. CFR ROOF COMPONENTS WITH ENGINEERING

(APPLICABLE FOR CFR ROOF COMPONENTS WITH ENGINEERING ORDERS)

4.1 COMPONENTS WITH ENGINEERING DEFINITION.

4.1.1 IN A CASE WHERE MBS IS PROVIDING THE CFR ROOF SYSTEM TO BE USED IN CONJUNCTION WITH A NON-MBS STRUCTURE, MBS REFERS TO THAT AS A "COMPONENTS WITH ENGINEERING." THIS SIMPLY MEANS THAT MBS SHALL CALCULATE THE QUANTITIES AND LENGTHS FOR THE MATERIAL REQUIRED. MBS IS PERFORMING NO ENGINEERING STUDY OF THE EXISTING STRUCTURE. THE ENGINEER OF RECORD ON THE PROJECT SHALL BE RESPONSIBLE FOR COORDINATING THE CFR ROOF SYSTEM WITH THE OTHER TRADES OF THE PROJECT TO INSURE A SAFE, QUALITY, AND PROPER APPLICATION OF THE ROOF SYSTEM.

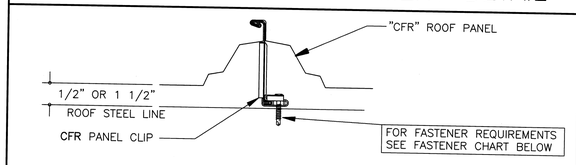
4.2 DIAPHRAGM.

4.2.1 THE MBS ROOF IS DESIGNED TO ACCOMMODATE THERMAL EXPANSION AND CONTRACTION AND WILL NOT ACT AS A DIAPHRAGM FOR RESISTING LATERAL LOAD FORCES OR PROVIDING LATERAL STABILITY TO THE ROOF STRUCTURAL MEMBERS. DUE CONSIDERATION FOR THIS MUST BE ADRESSED BY THE PROJECT ENGINEER OF RECORD. IN ADDITION, THE CFR ROOF, BECAUSE IT IS DESIGNED TO FLOAT, WILL NOT SUPPORT STRUCTURAL MEMBERS LATERALLY. WHEN REPLACING AN EXISTING SCREWDOWN ROOF, ADDITIONAL BRACING MAY BE REQUIRED TO LATERALLY SUPPORT THE MEMBERS. ENGINEERING AND MATERIAL FOR THESE USES SHALL NOT BE PROVIDED BY MBS.

4.3 CLIP FASTENING REQUIREMENTS.

4.3.1 REFER TO PART II, "DESIGN AND PERFORMANCE CRITERIA" FOR CFR ROOF PANEL CLIP FASTENING REQUIREMENTS.

CFR PANEL CLIP ATTACHMENT DETAIL



STANDARD PANEL CLIP ATTACHMENT

CLIP FASTENING NOTES:

? NUCOR CLIPS ARE DESIGNED WITH (4) HOLES.
? WORK FOR EITHER A PURLIN OR BAR JOIST SYSTEM.
? FASTENER REQUIREMENTS VARY PER JOB.
? FAILURE TO COMPLY WITH YOUR JOBS SPECIFIC FASTENER REQUIREMENTS MAY CAUSE THE ROOF TO BE REMOVED AND REPLACED.
? DO NOT OVERDRIVE FASTENERS ON SLIDING CLIPS. OVER DRIVING CAN STRIP THE THREADS, CAUSE THE CLIP NOT TO ENGAGE THE SUPPORT MEMBER PROPERLY AND/OR THE CLIP NOT TO SLIDE PROPERLY. USE SCREW GUNS WITH TORQUE CONTROL SET TO FUNCTION PROPERLY FOR THE COMBINATION OF FASTENER SIZE, HOLE SIZE, AND MATERIAL THICKNESS.
? SPREAD FASTENERS OUT AS FAR AS POSSIBLE. AVOID PLACING FASTENERS SIDE BY SIDE.

STANDARD CFR CLIP

STD. 4" CFR CLIP PART NUMBERS	
MARK #	PART DESCRIPTION
H2500	SHORT FIXED CLIP
H2510	TALL FIXED CLIP
H2520	SHORT SLIDING CLIP
H2530	TALL SLIDING CLIP

STD. CLIP FASTENER REQUIREMENTS
NON-FM JOBS
(2) FASTENERS PER CLIP (U.N.O.) H1070 AT JOISTS H1020 AT PURLINS
FM 1-60 JOBS
(2) FASTENERS PER CLIP H1070 AT JOISTS H1020 AT PURLINS
FM 1-90 THRU FM 1-180 JOBS
(2) H1070 AT JOISTS (3) H1020 AT PURLINS

CFR PERIMETER CLIP

CFR PERIMETER CLIP PART NUMBERS	
MARK #	PART DESCRIPTION
H2720	SHORT SLIDING 8" CLIP
H2730	TALL SLIDING 8" CLIP
H2740	SHORT SLIDING 12" CLIP
H2750	TALL SLIDING 12" CLIP
H2760	SHORT SLIDING 16" CLIP
H2770	TALL SLIDING 16" CLIP

PERIMETER CLIP FASTENER REQUIREMENTS
PURLINS - (3) H1020
JOISTS - (2) H1070

ISSUE	DWN	CHK	ENG	P.E.	DATE
APPROVALS	MBS	CEB	NHS	CDN	09/14/2012
REVISED APPROVALS	MBS	CEB			09/27/2012

NUCOR BUILDING SYSTEMS
305 INDUSTRIAL PARKWAY, WATERLOO, IN 46793
PHONE: (260) 837-7891 FAX: (260) 837-7384
PO BOX 1006, 200 WHETSTONE RD, SWANSEA, SC 29160
PHONE: (803) 568-2100 FAX: (803) 568-2121
600 APACHE TRAIL, TERRELL, TX 75160
PHONE: (972) 524-5407 FAX: (972) 524-5417
1050 WATERY LANE, BRIGHAM CITY, UT 84302
PHONE: (435) 919-3100 FAX: (435) 919-3101

PROJECT NAME:
AQUA NY WATER PHILLIP ROSS IND.
LEVITTOWN, NY 11756

CUSTOMER:
DANALLISON ENTERPRISES, INC
MASTIC BEACH, NY 11951

JOB NUMBER:
S12S0554A

SHEET NO:
D6 of 9

MAILED SEP 27 20

STATE OF NEW YORK
COREY D. NORRIS
LICENSED PROFESSIONAL ENGINEER
#80445-1
PROFESSIONAL ENGINEER
9/27/12

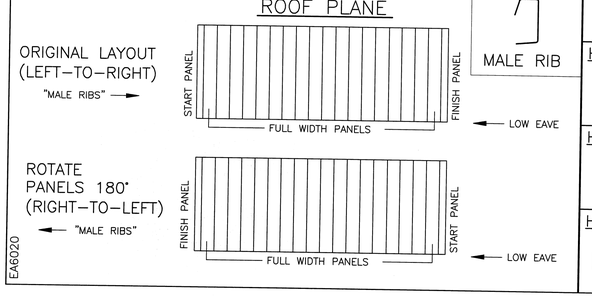
THIS SEAL PERTAINS ONLY TO THE MATERIALS DESIGNED AND SUPPLIED BY NUCOR BUILDING SYSTEMS, A DIVISION OF NUCOR CORPORATION. THE DRAWINGS AND THE METAL BUILDING WHICH THEY REPRESENT ARE THE PRODUCT OF NUCOR BUILDING SYSTEMS. THE REGISTERED PROFESSIONAL ENGINEER WHOSE SEAL APPEARS ON THESE DRAWINGS IS EMPLOYED BY NUCOR BUILDING SYSTEMS AND DOES NOT SERVE AS OR REPRESENT THE PROJECT ENGINEER OF RECORD AND SHALL NOT BE CONSTRUED AS SUCH.

ROOF SHEETING ERECTOR NOTES

1.) THE ROOF SHEETING PLAN IS SHOWN WITH THE ROOF PANELS BEING ERECTED FROM "LEFT-TO-RIGHT". IF THE DESIRE IS TO ERECT THE ROOF PANELS FROM "LEFT-TO-RIGHT", FOLLOW THE ROOF SHEETING PLAN AS SHOWN. IF THE DESIRE IS TO ERECT THE ROOF PANELS FROM "RIGHT-TO-LEFT", FOLLOW THE INSTRUCTIONS SHOWN BELOW.

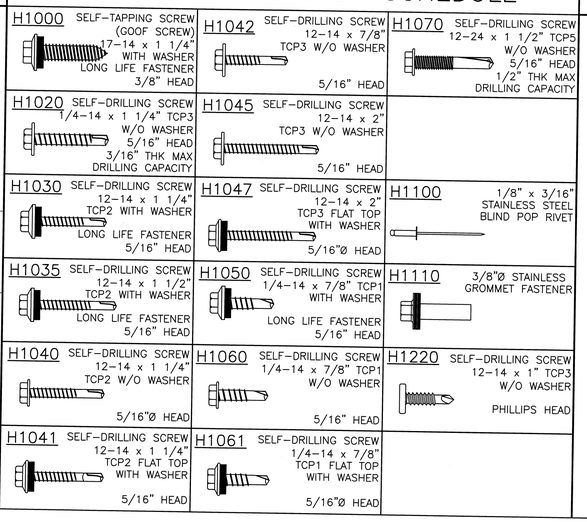
2.) START & FINISH PANEL DIMENSIONS SHOWN BELOW ARE FOR EXAMPLE ONLY.

3.) WHEN SETTING BUNDLES OF PANELS ON THE ROOF, THE "MALE RIB" MUST ALWAYS BE AWAY FROM THE END OF THE BUILDING WHERE THE SHEETING WILL BEGIN.

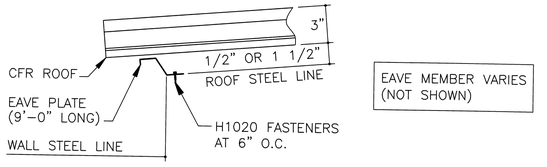


EA6020

STANDARD FASTENER SCHEDULE



CFR EAVE PLATE DETAIL



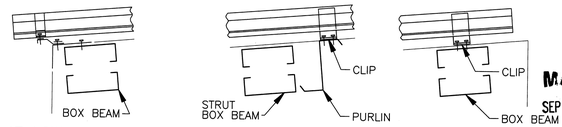
EAVE PLATE PART NUMBERS WITH SCULPTURED RAKE TRIM			
AT SHORT CLIPS		AT TALL CLIPS	
PART #	EAVE TRIM DETAIL	PART #	EAVE TRIM DETAIL
EPA03	SIMPLE EAVE OR EAVE GUTTER	EPB03	SIMPLE EAVE OR EAVE GUTTER
EPD01	LOW EAVE EXTENSION	EPE01	LOW EAVE EXTENSION
EPD___	SCULPTURED EAVE	EPE___	SCULPTURED EAVE

EAVE PLATE PART NUMBERS WITH SIMPLE EAVE & SIMPLE RAKE			
AT SHORT CLIPS		AT TALL CLIPS	
PART #	ROOF SLOPE	PART #	ROOF SLOPE
EPA03	< OR = 4:12	EPB03	< OR = 4:12
EPD01	> 4:12, < OR = 11:12	EPE01	> 4:12, < OR = 11:12
EPD02	12:12	EPE02	12:12

SPECIAL CONDITON AT A COLD-FORMED BOX BEAM

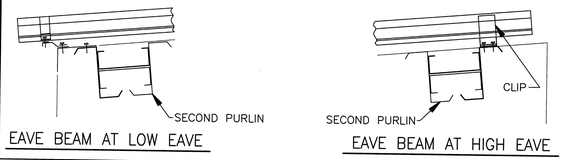
IF THIS PROJECT HAS A COLD-FORMED BOX BEAM:

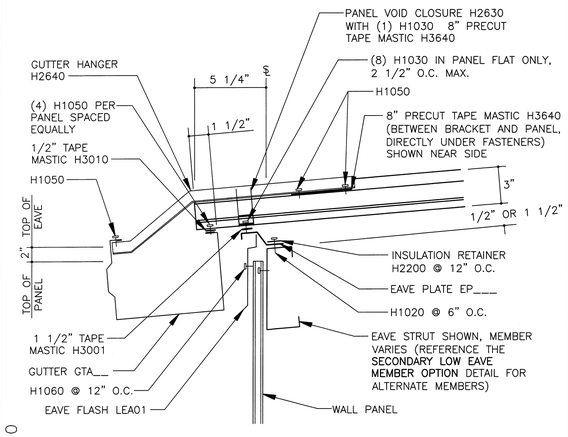
1) AT THE LOW EAVE, DO NOT ATTACH ROOF CLIPS TO THE BOX BEAM.
2) AT A STRUT LINE (ADJACENT TO A PURLIN), DO NOT ATTACH ROOF CLIPS TO THE BOX BEAM. (NOTE: THE STRUT LINE COULD BE AT THE HIGH EAVE).
3) AT THE HIGH EAVE, THAT IS NOT ADJACENT TO A PURLIN, DO ATTACH ROOF CLIPS TO THE BOX BEAM.



SPECIAL CONDITON AT A STRONG-BACK EAVE BEAM

IF THIS PROJECT HAS AN EAVE BEAM WITH (2) PURLINS, AS SHOWN, DO NOT ATTACH ROOF CLIPS TO THE "SECOND" PURLIN.





ED6010

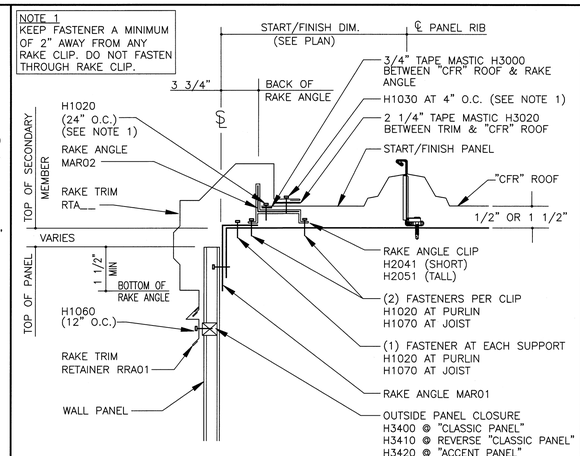
EAVE GUTTER DETAIL

"CFR" ROOF

SEE WALL SHEETING ERECTION NOTES FOR WALL PANEL FASTENER LOCATIONS

TRIM_951

NOTE 1
KEEP FASTENER A MINIMUM OF 2" AWAY FROM ANY RAKE CLIP. DO NOT FASTEN THROUGH RAKE CLIP.



EE6010

SCULPTURED RAKE DETAIL

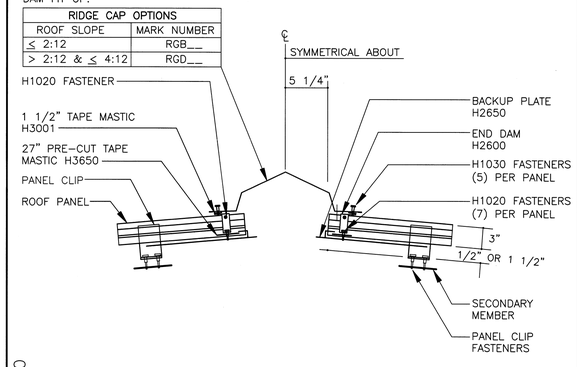
"CFR" ROOF

SEE WALL SHEETING ERECTION NOTES FOR WALL PANEL FASTENER LOCATIONS

TRIM_952

ERECTOR NOTE:
H1020 FASTENERS AT PURLINS/H1070 FASTENERS AT JOISTS & H2200 INSULATION WASHERS HAVE BEEN SUPPLIED AT 12" O.C. FOR INSULATION ATTACHMENT AT THE RIDGE.
FIELD NOTCH PANELS AS NEEDED TO ALLOW FOR PROPER END DAM FIT UP.

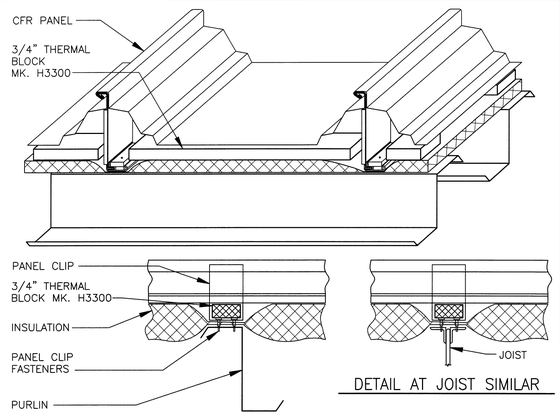
RIDGE CAP OPTIONS	
ROOF SLOPE	MARK NUMBER
≤ 2:12	RGB__
> 2:12 & ≤ 4:12	RGD__



EG6050

RIDGE DETAIL

TRIM_953

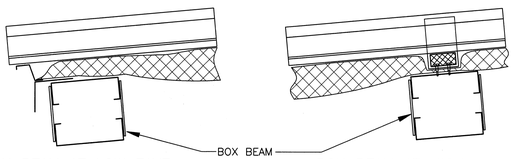


DETAIL AT JOIST SIMILAR

THERMAL BLOCK DETAIL AT TALL CFR CLIPS

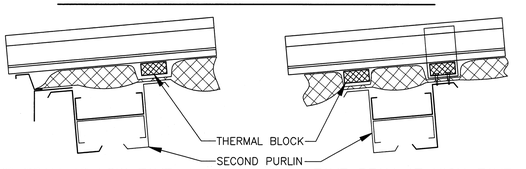
CFR ROOF WITH BATT INSULATION

SPECIAL CONDITION AT A BOX BEAM



BOX BEAM AT LOW EAVE — BOX BEAM AT HIGH EAVE

SPECIAL CONDITION AT AN EAVE BEAM



EAVE BEAM AT LOW EAVE — EAVE BEAM AT HIGH EAVE

IF THIS PROJECT HAS AN EAVE BEAM WITH (2) PURLINS, AS SHOWN, DO NOT ATTACH ROOF CLIPS TO THE "SECOND" PURLIN. HOWEVER, THERMAL BLOCKS ARE PROVIDED FOR INSTALLATION AT THE SECOND PURLIN.

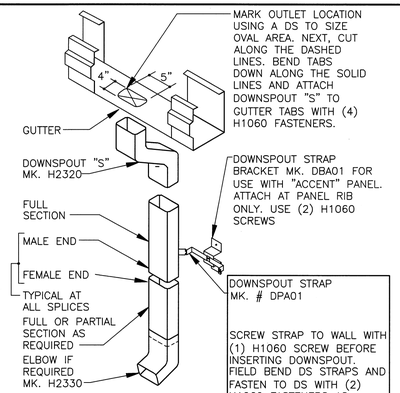
INSULATION TIE-OFF AT THE EAVES VARIES BASED ON THE EAVE CONDITION. REFER TO THE ROOF PANEL ERECTION MANUAL FOR DETAILS.

RP1022

USE (4) POP RIVETS MK. H1100 AT ALL ELBOW, "S", AND DOWNSPOUT CONNECTIONS U.N.O.

ERECTOR NOTES:

1. MITERING OF THE "S" WILL BE REQUIRED AT SLOPES OVER 4:12 FOR PROPER LINE UP WITH THE DOWNSPOUT.
2. IF THIS PROJECT CONTRACT SPECIFIES "S" SHAPES AT THE BOTTOM OF THE DOWNSPOUT IN LIEU OF ELBOWS, SEE DETAIL __/__
3. FIELD WORK (2) ELBOWS AS REQUIRED AT INSET/OUTSET WALL CONDITION.
4. LOCATE DS STRAPS ONE AT EVERY "S", ELBOW AND DS SPLICE.



DOWNSPOUT STRAP (MK. # H2350 OR DPA01) AND STRAP BRACKETS (MK. DBA01) ARE ALSO PROVIDED FOR MASONRY WALL APPLICATIONS AS WELL AS FOR ATTACHMENT TO COLUMNS. FASTENERS TO MASONRY ARE NOT PROVIDED BY THE M.B.S. H1060 FASTENERS ARE PROVIDED FOR COLUMN ATTACHMENT APPLICATIONS, PRE-DRILLING WILL BE REQUIRED.

GA0130

STD. GUTTER AND DOWNSPOUT DETAIL

'TRIM_21'

STANDARD FASTENER SCHEDULE

H1000 SELF-TAPPING SCREW (GOOF SCREW) 17-14 x 1 1/4" WITH WASHER LONG LIFE FASTENER 3/8" HEAD

H1020 SELF-DRILLING SCREW 1/4-14 x 1 1/4" TCP3 W/O WASHER 5/16" HEAD 3/16" THK MAX DRILLING CAPACITY

H1030 SELF-DRILLING SCREW 12-14 x 1 1/4" TCP2 WITH WASHER LONG LIFE FASTENER 5/16" HEAD

H1035 SELF-DRILLING SCREW 12-14 x 1 1/2" TCP2 WITH WASHER LONG LIFE FASTENER 5/16" HEAD

H1040 SELF-DRILLING SCREW 12-14 x 1 1/4" TCP2 W/O WASHER 5/16"Ø HEAD

H1041 SELF-DRILLING SCREW 12-14 x 1 1/4" TCP2 FLAT TOP WITH WASHER 5/16" HEAD

H1042 SELF-DRILLING SCREW 12-14 x 7/8" TCP3 W/O WASHER 5/16" HEAD

H1045 SELF-DRILLING SCREW 12-14 x 2" TCP3 W/O WASHER 5/16" HEAD

H1047 SELF-DRILLING SCREW 12-14 x 2" TCP3 FLAT TOP WITH WASHER 5/16"Ø HEAD

H1050 SELF-DRILLING SCREW 1/4-14 x 7/8" TCP1 WITH WASHER LONG LIFE FASTENER 5/16" HEAD

H1060 SELF-DRILLING SCREW 12-14 x 7/8" TCP1 W/O WASHER 5/16" HEAD

H1061 SELF-DRILLING SCREW 12-14 x 7/8" TCP1 FLAT TOP WITH WASHER 5/16"Ø HEAD

H1070 SELF-DRILLING SCREW 12-24 x 1 1/2" TCP5 W/O WASHER 5/16" HEAD 1/2" THK MAX DRILLING CAPACITY

H1100 1/8" x 3/16" STAINLESS STEEL BLIND POP RIVET

H1110 3/8"Ø STAINLESS GROMMET FASTENER

H1220 SELF-DRILLING SCREW 12-14 x 1" TCP3 W/O WASHER PHILLIPS HEAD

ISSUE	DWN	CHK	ENG	P.E.	DATE
APPROVALS	MBS	CEB	NHS	CDN	09/14/2012
REVISED APPROVALS	MBS	CEB			09/27/2012

NUCOR BUILDING SYSTEMS
305 INDUSTRIAL PARKWAY, WATERLOO, IN 46793
PHONE: (260) 837-7891 FAX: (260) 837-7384
PO BOX 1006, 200 WHETSTONE RD, SWANSEA, SC 29160
PHONE: (803) 568-2100 FAX: (803) 568-2121
600 APACHE TRAIL, TERRELL, TX 75160
PHONE: (972) 524-5407 FAX: (972) 524-5417
1050 WATERY LANE, BRIGHAM CITY, UT 84302
PHONE: (435) 919-3100 FAX: (435) 919-3101

PROJECT NAME: AQUA NY WATER PHILLIP ROSS IND.
LEVITTOWN, NY 11756

CUSTOMER: DANALLISON ENTERPRISES, INC
MASTIC BEACH, NY 11951

JOB NUMBER: S12S0554A

SHEET NO: D7 of 9

MAILED SEP 27 2012

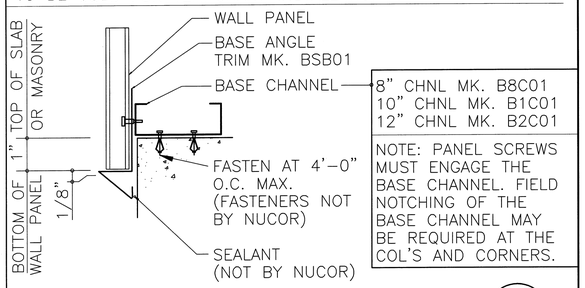
STATE OF NEW YORK · CASEY D. NORRIS · 090465 · LICENSED PROFESSIONAL ENGINEER
9-27-12

OUTSIDE CORNER TRIM MK. H4200

INSIDE CORNER TRIM MK. H4210

END CLOSURE MK. H4220 (PW). APPLY TUBE CAULK (H3152) ALL AROUND AND INSERT INTO THE END OF THE BSB01 TRIM AT FRAMED OPENINGS.

ERECTOR NOTE:
UNTIL WALL PANELS ARE INSTALLED, (3) H1040 SCREWS ARE TO BE USED FOR TEMPORARY INSTALLATION OF THE BASE TRIM.



8" CHNL MK. B8C01
10" CHNL MK. B1C01
12" CHNL MK. B2C01

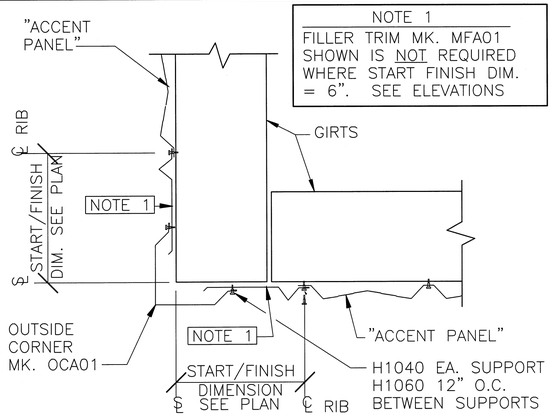
NOTE: PANEL SCREWS MUST ENGAGE THE BASE CHANNEL. FIELD NOTCHING OF THE BASE CHANNEL MAY BE REQUIRED AT THE COL'S AND CORNERS.

BASE TRIM DETAIL (WITH CHANNEL) T2

SEE WALL SHEETING ERECTION NOTES FOR WALL PANEL FASTENER LOCATIONS

GB0030

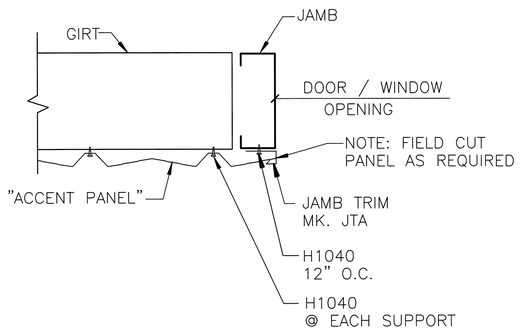
NOTE 1
FILLER TRIM MK. MFA01 SHOWN IS NOT REQUIRED WHERE START FINISH DIM. = 6". SEE ELEVATIONS



OUTSIDE CORNER DETAIL

"ACCENT PANEL" 'TRIM_8'

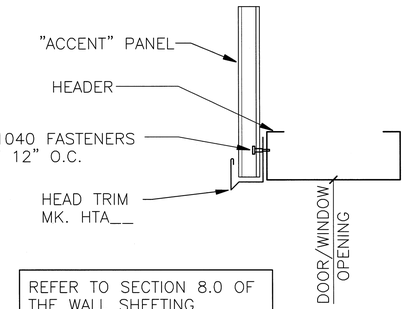
GC0011



JAMB DETAIL

"ACCENT PANEL" 'TRIM_10'

GD0010



REFER TO SECTION 8.0 OF THE WALL SHEETING ERECTIOIN MANUAL FOR FURTHER DETAIL AND PANEL PREPARATION INFORMATION

HEADER DETAIL

"ACCENT PANEL" 'TRIM_13'

GD0040

SILL DETAIL

"ACCENT PANEL" 'TRIM_16'

GD0070

FRAMED OPENING COVER TRIM DETAIL

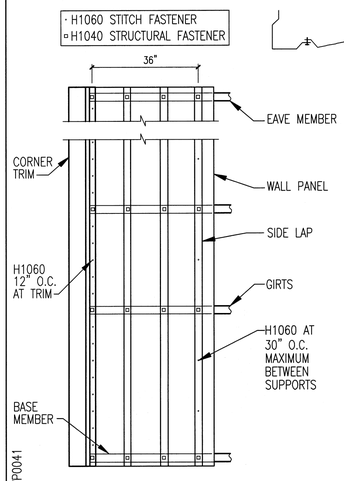
SILL SHOWN, HEAD AND JAMBS SIMILAR 'TRIM_19'

GD0005

"ACCENT PANEL" ERECTION NOTES

· H1060 STITCH FASTENER
▫ H1040 STRUCTURAL FASTENER

(PANELS 36" NET LAY)



ERECTOR NOTE: 1/2" SIDELAP MASTIC (H3010) IS REQUIRED IN SNOWDRIFT CONDITIONS. REFER TO THE ELEVATIONS FOR LOCATION REQUIREMENTS.

1. BLOCK GIRTS TO "LEVEL" POSITION BEFORE STARTING PANEL ERECTION. MAINTAIN WOOD BLOCKING (NOT BY NUCOR) UNTIL PANEL TO STRUCTURAL FASTENERS ARE INSTALLED.
2. ALIGN AND PLUMB FIRST WALL PANEL.
3. TO PREVENT "OIL-CANNING", ALL PANEL FASTENERS SHOULD START FROM BASE MEMBER AND THEN BE SECURED TO EACH STRUCTURAL GIRT TOWARD THE EAVE.
4. FOUNDATION MUST BE SQUARE, LEVEL, AND CORRECT TO THE OUT-TO-OUT STEEL LINE DIMENSIONS.
5. ERECTION CREW IS TO CLEAN ALL WALL PANELS BEFORE LEAVING JOB SITE.
6. ERECTOR IS TO ERECT PANELS SO THAT SIDELAPS ARE AWAY FROM THE MAIN TRAFFIC AREA'S LINE OF SIGHT.
7. STORE PANELS PROPERLY TO PREVENT MOISTURE. SEE ERECTION MANUAL.

WP0041

ISSUE	DWN	CHK	ENG	P.E.	DATE
APPROVALS	MBS	CEB	NHS	CDN	09/14/2012
REVISED APPROVALS	MBS	CEB			09/27/2012

NUCOR BUILDING SYSTEMS
305 INDUSTRIAL PARKWAY, WATERLOO, IN 46793
PHONE: (260) 837-7891 FAX: (260) 837-7384
PO BOX 1006, 200 WHETSTONE RD, SWANSEA, SC 29160
PHONE: (803) 568-2100 FAX: (803) 568-2121
600 APACHE TRAIL, TERRELL, TX 75160
PHONE: (972) 524-5407 FAX: (972) 524-5417
1050 WATERY LANE, BRIGHAM CITY, UT 84302
PHONE: (435) 919-3100 FAX: (435) 919-3101

PROJECT NAME: AQUA NY WATER PHILLIP ROSS IND.
LEVITTOWN, NY 11756

CUSTOMER: DANALLISON ENTERPRISES, INC
MASTIC BEACH, NY 11951

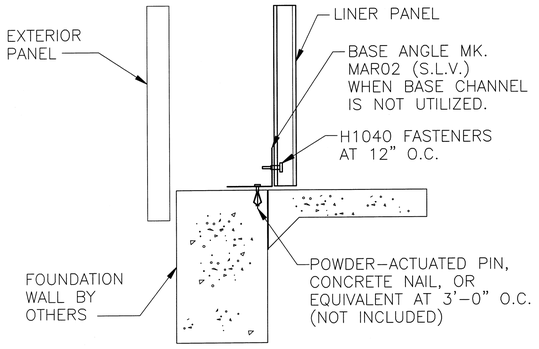
JOB NUMBER: S12S0554A

SHEET NO: D8 of 9

STATE OF NEW YORK ★ JOSEPH D. NORRIS ★ 090445 ★ LICENSED PROFESSIONAL ENGINEER
9-27-12

MAILED SEP 27 2012

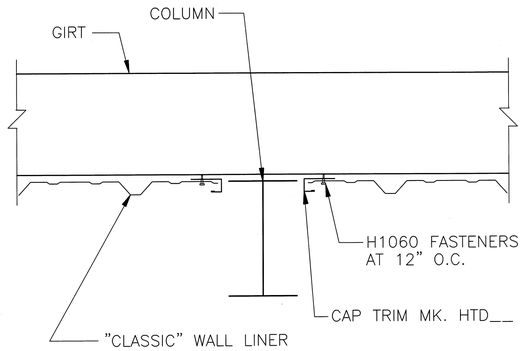
THIS SEAL PERTAINS ONLY TO THE MATERIALS DESIGNED AND SUPPLIED BY NUCOR BUILDING SYSTEMS, A DIVISION OF NUCOR CORPORATION. THE DRAWINGS AND THE METAL BUILDING WHICH THEY REPRESENT ARE THE PRODUCT OF NUCOR BUILDING SYSTEMS. THE REGISTERED PROFESSIONAL ENGINEER WHOSE SEAL APPEARS ON THESE DRAWINGS IS EMPLOYED BY NUCOR BUILDING SYSTEMS AND DOES NOT SERVE AS OR REPRESENT THE PROJECT ENGINEER OF RECORD AND SHALL NOT BE CONSTRUED AS SUCH.



LINER PANEL BASE DETAIL

'TRIM_38'

IC0010

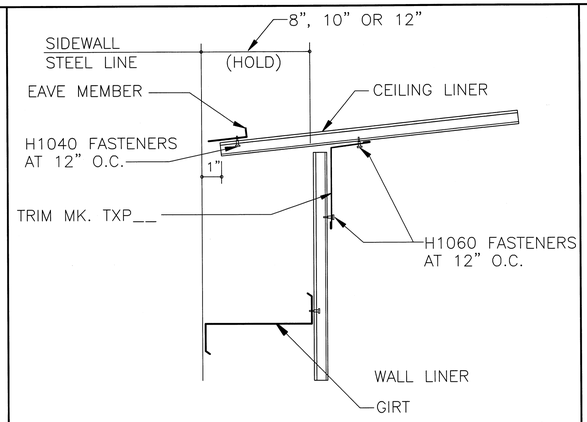


JAMB DETAIL AT COLUMN

"CLASSIC" WALL LINER

'TRIM_35'

IA0010

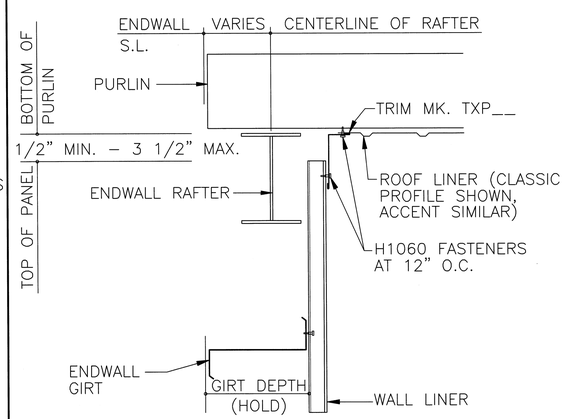


LOW EAVE LINER PANEL DETAIL

FULL HEIGHT LINER WITH CEILING LINER

'TRIM_54'

ID0050



LINER PANEL AT RAKE DETAIL

POST AND BEAM ENDWALL (INSET) WITH CEILING LINER PANEL

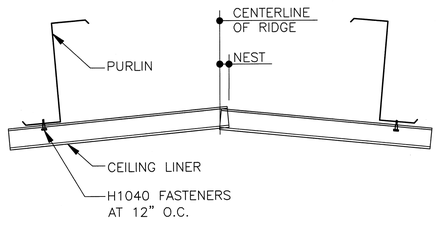
'TRIM_60'

IE0041

ISSUE	DWN	CHK	ENG	P.E.	DATE
APPROVALS	MBS	CEB	NHS	CDN	09/14/2012
REVISED APPROVALS	MBS	CEB			09/27/2012

ERECTOR NOTE:

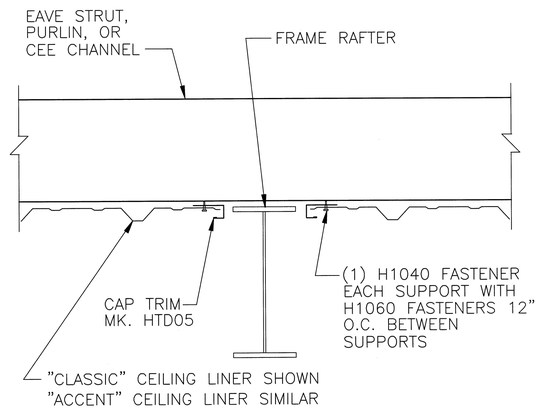
EXTEND THE LINER PANEL PAST CENTERLINE ON ONE SIDE OF THE RIDGE, ENOUGH TO NEST INSIDE OF MATING PANEL. THE PANEL LOCATION AT THE LAP OR EAVE WILL VARY DUE TO THE PANEL OFFSET.



RIDGE LINER PANEL DETAIL

'TRIM_68'

IF0010

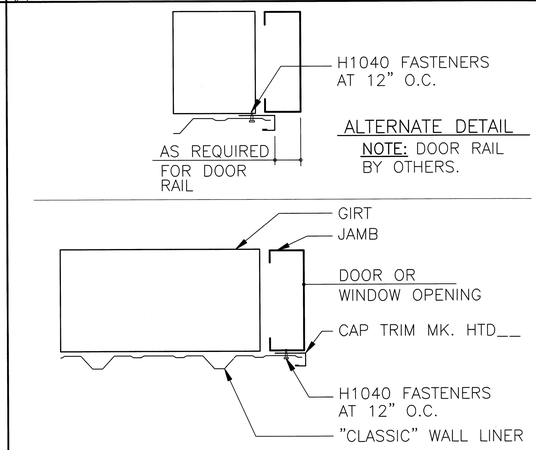


CEILING LINER DETAIL AT RAFTER

ROOF PANEL NOT SHOWN FOR CLARITY
SEE NBS LINER PANEL ERECTION NOTES FOR FASTENER SPACING

'TRIM_70'

IA0100



ALTERNATE DETAIL

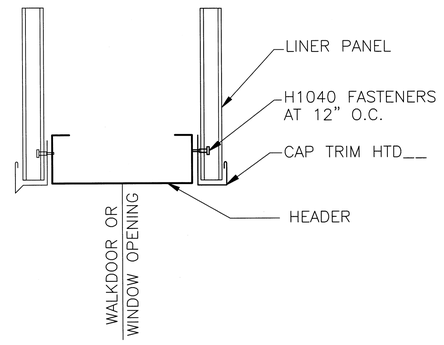
NOTE: DOOR RAIL BY OTHERS.

JAMB DETAIL

"CLASSIC" WALL LINER

'TRIM_23'

IG0050

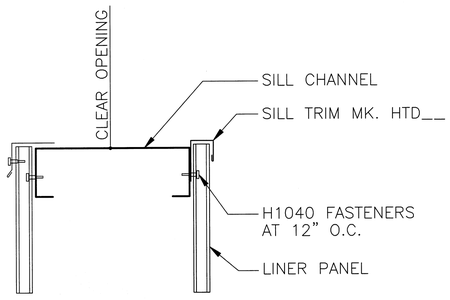


HEADER DETAIL

AT WALKDOOR OR WINDOW WITH LINER PANEL

'TRIM_27'

IG0090



SILL DETAIL

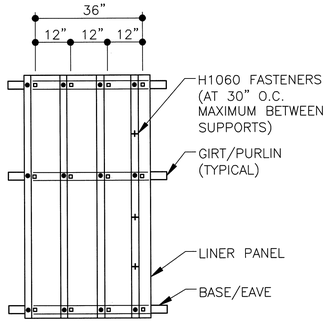
AT LINER PANEL

'TRIM_28'

IG0100

ERECTOR NOTE:

THE ERECTION OF THE LINER PANEL MUST BE COORDINATED PROPERLY WITH THE BRACING AND BRACE STRUTS TO ENSURE PROPER FIT-UP. IT IS THE ERECTOR'S RESPONSIBILITY TO ENSURE THAT THE STRUCTURE IS ADEQUATELY BRACED DURING THE ERECTION PROCESS. TEMPORARY REMOVAL OF BRACING AND BRACE STRUTS IS ACCEPTABLE FOR LINER PANEL ERECTION, PROVIDED ADEQUATE TEMPORARY BRACING IS USED.



FASTENER CHART
+ STITCH FASTENER H1060
▫ STRUCTURAL FASTENER H1040 AT "CLASSIC" PANEL
● STRUCTURAL FASTENER H1040 AT "REVERSE CLASSIC" H1040 AT "ACCENT" PANEL

WALL AND CEILING LINER PANEL ERECTION NOTES

(PANELS 36" NET LAY)

IA0070

MAILED
SEP 27 2012

NUCOR BUILDING SYSTEMS
305 INDUSTRIAL PARKWAY, WATERLOO, IN 46793
PHONE: (260) 837-7891 FAX: (260) 837-7384
PO BOX 1006, 200 WHETSTONE RD, SWANSEA, SC 29160
PHONE: (803) 568-2100 FAX: (803) 568-2121
600 APACHE TRAIL, TERRELL, TX 75160
PHONE: (972) 524-5407 FAX: (972) 524-5417
1050 WATERY LANE, BRIGHAM CITY, UT 84302
PHONE: (435) 919-3100 FAX: (435) 919-3101

PROJECT NAME: AQUA NY WATER PHILLIP ROSS IND.
LEVITTOWN, NY 11756

CUSTOMER: DANALLISON ENTERPRISES, INC
MASTIC BEACH, NY 11951

JOB NUMBER: S12S0554A

SHEET NO: D9 of 9

STATE OF NEW YORK · COREY D. NORRIS · 090445 · LICENSED PROFESSIONAL ENGINEER · 9/27/12